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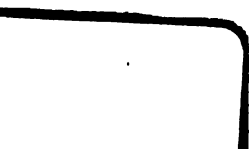
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A. E. &



Dr. Gifford *mostly*
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THE LONDON LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

EDITED BY

THOMAS WAKLEY, SURGEON,

M.P. DURING EIGHTEEN YEARS FOR THE METROPOLITAN BOROUGH OF FINSBURY,
AND CORONER FOR THE COUNTY OF MIDDLESEX.

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J. H. BENNET, M.D. T. WAKLEY, JR., M.R.C.S.F

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IN TWO VOLUMES ANNUALLY.

VOL. II.

NEW YORK, JULY, 1857.

No. 1.

Clinical Lectures

ON

D R O P S Y.

By GEORGE FIFE, M.D.,

PHYSICIAN TO THE QUEEN'S HOSPITAL, AND PROFESSOR OF
CLINICAL MEDICINE AND MATERIA MEDICA AND THERAPEU-
TICS AT QUEEN'S COLLEGE, BIRMINGHAM.

GENTLEMEN,—On two previous occasions I have called your attention to one of the most important and fatal diseases we meet with—I mean Dropsy. Although those lectures were given on cases then under treatment, I entered as fully as time permitted me on the consideration of the pathology of the disease.

It has been fashionable of late (for in medicine, as in everything else, there is a fashion, and too often a very arbitrary one) to deny the existence of dropsy as an idiopathic disease. My own, and not a very limited, experience, however, has taught me that dropsy is quite as much a disease as either fever or, in fact, any inflammation, whatever part or organ such state may involve. That dropsy, too, frequently occurs as a mere result of disease in some one or other of the more important organs of the body, does not admit of either denial or question. But, admitting this, you will, in a large majority of cases, find that, by a minute and careful examination of the symptoms, there is little difficulty in distinguishing *symptomatic* from *idiopathic* dropsy.

Having, as I have already said, on two former occasions considered, not only the details of individual cases, but also the pathology of the disease, I purpose now rather to bring under your notice the peculiar plan of treatment which I have pursued in the wards of the Queen's Hospital, the results attending it, and, in fine, a sort of statistical report. With this end in view, I now at once enter on my agreeable task—agreeable, because the results have very, very far ex-

ceeded my most sanguine expectations. From the list of cases which I will submit to you, you will, I think, agree with me that dropsy is a disease independent of any organic cause, and also that, in a great number of cases, it admits of a complete and permanent cure.

Thirteen years have elapsed since, on the very slender experience of *three cases* successfully treated with croton oil, I published these in the *Provincial Medical and Surgical Journal*. I have often, in the interval, intended to publish the results of a somewhat extensive experience in private practice; but I delayed doing so in order to test my mode of treatment more fully, and which, as you all know, I have done in the wards of the Queen's Hospital. This I have now done, as will be acknowledged when I say that, on going over the register of the hospital, I find that it has fallen to my lot to treat no less than forty-three cases of this disease, besides three others, which have been admitted on my last reception-day, and are now under treatment.

Now, gentlemen, if I call a case by the name of dropsy, I do not mean a mere case of effusion of fluid into either a cavity or into the cellular tissue, as in common oedema; such effusion resulting from either disease of some important organ, or the suspension or obstruction of the due performance of its function. Far from it. If such had been my system of nosology and diagnosis, instead of reporting forty-three or forty-six cases, I might have converted them into some hundreds. For example, with one solitary exception, to which, from its *anomaly*, I must recur, I do not even mention a single case of the many which I have treated of dropsy as a sequela of scarlatina. To make this more plain to you: if a man be admitted under my care labouring under hypertrophy of the heart, and this organic lesion be accompanied by dropsical effusion, I have not been in the habit of designating such case as one of dropsy, but at once put it down as one of hypertrophy of the heart.

Again: if from symptoms, into the detail of which it is unnecessary now to go, I apprehend that a man is suffering from cirrhosis of the liver, of which condition, so far as my observation and experience enable me to speak, dropsical effusion is an almost invariable concomitant, it matters not to me how big his abdomen may be, or how swollen his extremities, I call such case, as it ought to be called, one of *cirrhosis*, and regard the dropsical effusion simply as an effect of such morbid state of an important viscus. The same has been my rule in regard to renal disease, especially that form of it called *albuminuria*, or "Bright's disease."

It may not be irrelevant to remind you now, of what I have, both in the wards of the hospital and in this room, frequently mentioned to you—that to Dr. Blackall belongs the honour of first pointing out the diagnosis between renal and hepatic dropsy.

One fact only in connexion with the pathology of dropsy, after my former lectures, I deem it necessary to reiterate—that is, that in every such case, you have a decided loss of equilibrium between the exhalants and absorbents. This I now repeat, because, when I come to the consideration of the comparative value of elaterium and croton oil, you will find that my preference for the latter mainly depends upon this conviction.

In a subsequent part of this lecture, it will be my duty to demonstrate to you, what I conceive to be the real therapeutic difference between these two medicines, and on what foundation my preference of croton oil is actually based.

From what has now been said, you will understand that, in my opinion, dropsy may be idiopathic, or, in other words, a disease in itself. In most cases you will find that some very active agent has been in operation to produce the disease, however obscure such agency may be; and this is more especially the case when dropsy occurs in an acute form. I have had several such cases under my charge in the wards of the Queen's Hospital; and if you cannot call them to mind on the present occasion, the fault is yours, not mine, as both at the bedside, in going my diurnal round, and here, I have called your attention especially to them. This form of dropsy I have known to follow the suppression or cessation of almost every inordinate discharge; and such of you as have really attended my practice in the hospital cannot fail to remember cases illustrative of this statement. You may, perhaps, more particularly call to mind one case in which ascites, with anasarca, followed a suppressed gonorrhœa. This case, in the course of less than three weeks, left the hospital perfectly cured—I say perfectly cured, because there was no indication of any organic cause for the disease, and, in the absence of such, there is no valid reason, in a generally healthy system, for apprehending a recurrence of the disease.

In addition to the forty-three cases I have enumerated, there are now three additional cases in the wards,—two males and one female,—one

of the two first manifestly depending on general derangement of the system rather than on any organic lesion. The other as certainly arising from hepatic disorder, if not actual organic disease. The latter I apprehend to be the case; and if this poor fellow's liver be really diseased, I have not the slightest doubt that the disease is cirrhosis. The third case, to which I would now direct your attention, is that of A. P——. She is a young woman, twenty-three years of age, who was confined about three weeks ago, and, from the history of the case, it appears that dropsy had supervened almost immediately on her delivery. She is suffering from ascites to an enormous extent; she is also suffering from "phlegmasia dolens" of the right leg. This I only ascertained to be the fact on very minute inquiry, instigated by the fact that, after the disappearance of the œdema from the left leg, the right continued not only immensely enlarged, but also offered to the most cursory observer the whiteness, hardness, and uniform swelling of the limb, which is met with only in this disease. On more minute inquiry, I find that previously to any tumefaction of the limb taking place, she suffered from that acute and agonizing pain in the groin which, according to my experience, is the invariable precursor of phlegmasia dolens. The ascites is gone, the œdema of the left leg is hardly perceptible, and the enlargement of the right is sensibly diminished under the use of the roller of flannel, the pressure being most carefully and gradually increased on each application. This poor woman, however, can hardly recover, as now pulmonic symptoms have supervened, which are in themselves far more than sufficient to destroy life. After this statement you will agree with me that this is not a case of simple acute dropsy. Of the dropsy she is at this moment cured, but she will most assuredly sink under the complication which I have described.

As to the treatment of dropsy. There are several points connected with the diagnosis of the disease to be attended to before you can hope to arrive at anything like a rational mode of treatment. There is the great and important distinction first enunciated by Dr. Blackall—viz., the distinction or diagnosis between hepatic and renal dropsy, and this is of more importance than may at first sight be apparent, from the vast influence which it exerts over our therapeutics. Dr. Blackall, long before Bright's disease or albuminuria was heard of, showed that in almost every case, where dropsy depended on disease of the kidneys, albumen existed in the urine, whilst in similar cases of hepatic origin such was not the case.

Having said this much, I will now call your attention to the cases which have terminated fatally. The first was a man, T. O——, whose case was evidently of hepatic origin. Long before he died I stated to the pupils in the clinical ward my conviction that he suffered from cirrhosis. He died. His liver was not as large as my hand, and could hardly be cut through with the knife.

Another was the case of a man, J——. He died from extensive disease of the heart, of which the dropsy was a mere consequence. This also was fully proved by examination after death. The next was the case of S. B——, who died of heart disease, and during life suffered from general dropsy. The cases of C. B——, S. M——, and E. G——, were all precisely similar. All of these suffered from general dropsy; but all must have died, even had no dropsical symptoms ever occurred. The case of W. H—— deserves your special attention, not only from its duration and the great benefit which he derived from the plan of treatment which it is my object in this lecture to advocate, but still more from the fact that no case which I have treated illustrates more perfectly than this the palliative effects of the croton oil, where, from extensive organic disease, all hope of absolute cure is futile. In fine, in every case which has proved fatal, the scalpel showed that no human means could have by possibility been of avail. Hence I am fully justified in affirming that in every case which admitted of cure, the croton oil has effected it; and that where it has failed in my hands, no other means could have produced any other result, as the patients died not from dropsy, but from organic diseases, which must have inevitably destroyed life without its occurrence.

We have, however, dropsy arising from causes altogether independent of those to which I have just alluded, and most especially in young persons and after scarlatina or scarlet fever. In these cases, I find the treatment is comparatively simple. Except one case, I never, in my own experience, met with an instance of dropsy after scarlatina which proved fatal. The exception to which I allude was H. W——, a boy, nine years of age, who presented to us what may be considered as an almost *unique* case. I am not aware, either from personal or derived experience, that the annals of medicine afford a parallel to it. He laboured under ascites, anasarca, and oedema of the scrotum, the consequence of disease following scarlet fever two years ago. He had been in St. Thomas's and some other London hospitals before he was admitted into the Queen's. I mention his case thus particularly, because, as already said, I never met with such organic disease as "cirrhosis" in so young a child. It is the only case, even up to the period of adolescence, where a person laboured under that disease, which has come within my knowledge. The liver was not more than half its natural size, whilst the spleen was as large as the liver was small, weighing not less than twelve ounces, whilst its normal weight should only have been three, or at most four ounces.

There was another memorable case in a man named J——. He suffered from ascites, anasarca to a vast degree, and also from oedema of the scrotum, with very intense erysipelatous inflammation of the latter. For the relief of the latter, scarification was resorted to. This was followed by sloughing, to such an extent that the right testicle protruded, and was only retained in its

position by the spermatic cord. This man, as you all know, was discharged from the hospital perfectly cured.

Another man, P——, suffered from ascites, anasarca, and oedema of the scrotum. He got well, and was discharged cured; but, from the fact of his urine being charged with albumen, I have very little doubt that the disease will recur.

If time had permitted me so to do, it would have afforded me infinite satisfaction to have given you a complete analysis of all the cases which I have treated, with pathological and therapeutical remarks on each. From the very scanty and utterly inadequate portion of time which is allotted to clinical instruction, it is in vain to attempt it.

From what has now been said, you find that, in all, I have treated forty-six cases of dropsy in the Queen's Hospital, out of which number *thirteen* have died, every one of which must have done so, even though no dropsy had ever taken place.

As to the mode of treatment which I have pursued, all of you are too familiar with it, to render it necessary for me to go into any very minute details. You have it before you every day in the hospital, and can, therefore, judge of its efficacy for yourselves. *Facts are real or apparent*, and in nothing more than in the science of medicine, is it of greater importance to discriminate between that which is *real* and that which bears the semblance of *reality*. What I have this day brought under your notice is the *reality*.

You are all of you cognizant of my predilection for croton oil in the treatment of dropsy, whether as a curative or merely palliative agent. Let me now, as briefly as the subject will allow me to do, state to you the grounds on which I prefer it to elaterium, which has so long held the first place as a remedy in dropsy. If you refer to the best works on materia medica and therapeutics, you will find that elaterium and croton oil are both put down as *hydragogue cathartics*. In regard to elaterium, this is quite correct; but, as to croton oil, I, from extensive experience, affirm that, although a *drastic*, it is not a *hydragogue* cathartic, being in this respect inferior to a seidlitz powder. In illustration of this, I can say, and without fear of refutation, that an ounce of Epsom salts will give rise to more watery evacuations than even *three* minims of croton oil. What, then, it may be asked, are the grounds on which, and why do I prefer the croton oil? Why, because it at once diminishes the quantity of fluid effused, and, at the same time, exalts rather than depresses the power of the absorbents; in this respect affording a well marked and important distinction between it and elaterium.

My objections to elaterium are the following:—no man can deny that it is the most potent hydragogue cathartic that we possess, and that from this property it induces the most speedy diminution of dropsical effusion; but what is its ultimate and counterbalancing effect? It certainly depresses the power of the absorbents; hence any

benefit which arises from the speedy, though temporary, diminution of the dropsy, is far more than outweighed by this inseparable, and, so far as my observation extends, invariable result. Again: given with the utmost discretion, it is a medicine the action of which it is impossible either to predetermine or to regulate. On many occasions I have seen all but fatal syncope follow its exhibition. Have any of you ever witnessed such an effect from my mode of giving the croton oil? Never: nor have you seen a single instance of hypercatharsis, tenesmus, or any other dysenteric symptom ensue on its employment. The croton oil also possesses another very marked superiority over other purgatives, not only in the disease under consideration, but also generally—i.e., that in a very small compass it affords us at once a safe and certain purgative. For this reason it is that I so very frequently use it as an *immediate* and active purgative in cases of a comparatively ordinary character.

In dropsy, I feel convinced, from an extensive experience, and most careful observance of its action, that very much more of its efficacy is attributable to its stimulant effect upon the absorbents, than to its mere cathartic powers. No doubt persons unacquainted with its action will hold up their hands in astonishment at the *diurnal employment* of such a potent medicine; and yet every one who now hears me has seen patients taking it daily, even for weeks consecutively, with not only the most perfect impunity, but also with the most salutary results. Wherefore, I consider myself fully justified in affirming, that croton oil is not only the most effective, but also the safest medicine in dropsy; as I am not at this moment aware of any one of the patients whom I have treated with it, some of them in the last stages of the most formidable diseases, and reduced to the lowest possible state, having even fainted after its action; whilst even in the most hopeless of these cases, a greater or less degree of relief was experienced from its employment.

Thirteen years have elapsed since I first brought this treatment before the profession. At that time I was in the habit of giving the oil in doses of *three minims*, from which I never witnessed any unpleasant effects—although Mr. Braithwaite, in his "Retrospect," took occasion to honour me with a sneer. You may feel disposed to ask why I am now content to exhibit the medicine in doses of *one minim*? Because I find that the last more minute dose fulfils my object. Some of you may be aware that Rassori, who first introduced the antimonial treatment in inflammatory diseases, more especially of the chest, gave the medicine (potassio-tartrate of antimony) in doses of three grains, in which practice he was followed by a host of Continental and British practitioners. Now you all of you know that I generally give this medicine in doses of from one-sixth to one-quarter of a grain, and that I obtain the desired effect, at the same time guarding my patient against the consequences inseparable from the administration of such a medicine in the larger dose.

As to diuretics: these medicines are doubtless to be regarded as powerful auxiliaries to other remedial measures; but you will also constantly see that they do not produce the effect anticipated and wished for. This is more especially the case where the disease is of renal origin. The reason of this is obvious, the cause of the disappointment being, that from the morbid condition of the kidneys, those agents which, acting on a healthy organ, would produce the desired effect, have no power over the same when in a state of disease.

In conclusion, I may observe that, to Mr. Huntley, of Howdon, near Newcastle-on-Tyne, I am indebted for the plan of treatment which I now not only advocate, but from which I have obtained such satisfactory results. This acknowledgment I make, not only from a sense of justice, but also as a comparatively small tribute of respect to very considerable practical acumen and experience. If the plan of treatment now recommended be carried out with due care and discrimination, without which any therapeutic agency becomes mere empiricism, you will find that I have not said one word regarding the croton oil treatment of dropsy, which is not more than justified by the facts which I have brought before you.

At a future opportunity, I shall lay before you a tabular statement of the cases treated, with the cause of the disease, the result, and, where fatal, the structural changes.

LECTURE II.

GENTLEMEN,—I propose, after a very brief recapitulation of the leading points in my last lecture, to devote the present to the analytical examination of the forty-six cases of dropsy to which reference was there made. You will remember, then, that I divided dropsies into *acute* and *chronic*, into *symptomatic* and *idiopathic*. In regard to the last, I stated that many modern physicians, and amongst them men whose opinions are entitled to every consideration, absolutely deny the existence of dropsy as an idiopathic disease. From a tolerably extensive experience, however, I feel quite warranted in maintaining such division.

As to the *proximate cause* of, or the pathological condition in, dropsy, this, in every case, consists in the loss of equilibrium between the exhalant and absorbent systems, which loss of balance may result, either from the inordinate increase of exhalation, or from the defective power of absorption. Of this we have a good illustration afforded us in the various dropsical symptoms which so very commonly arise towards the close of chronic, and more especially organic diseases, in which the powers of life are gradually exhausted. In such cases, exhalation may, or may not, be increased, but most assuredly absorption is diminished, owing to the low and depressed state of the system. Another fact which I desire particularly to impress on your minds, is the very important diagnostic first enunciated by Dr. Blackall, between renal and hepatic dropsy. In conclusion of these

brief retrospective observations, I may add, that the tabular view of the cases which it has fallen to my lot to treat in the Queen's Hospital, presents some features worthy of remark. From such table it appears that the comparative frequency of the disease in males and females, was in the proportion of ten of the latter to thirty-six of the former—a fact at total variance with my experience in private practice. Again, as to the mortality from the disease, it will be found that thirteen deaths occurred in forty-six cases, in every one of which fatal cases, no other termination could be expected, even had no dropsical effusion occurred. In other words, these thirteen cases simply present us with the disease in its symptomatic form.

My reasons for preferring croton oil to elaterium are already fully known to you, so that it only remains for me to give you the best analysis of the cases that time permits.

The first cases can only be known to a very few of the senior students of the College; but many of more recent occurrence must be fresh in the memories of all who now hear me.

1. M. A—, aged sixty-six; Ascites; relieved; ovarian.—Now, this woman came into the hospital labouring under ascites to such a degree that none of the abdominal viscera could be distinguished. At a very early period of the treatment, I, from the history of the case, determined in my own mind that the origin of the disease was in the right ovary. The fluid having been completely got rid of by means of the croton oil, no room for doubt remained, as on the subsidence of the abdominal swelling, the right ovary could be felt as large as the liver, and presenting at its upper margin what might not be inaptly compared to that organ inverted. She ultimately, and very much to my regret, left the hospital.

2. Thomas O—, Ascites and Anasarca; Cirrhosis.—This man was, on many occasions, so far relieved as almost to lead me to entertain hopes of his restoration to comparative health. The futility of such expectation was, however, fully demonstrated by the scalpel after death, his liver being little larger than my fist, and so hard as to be cut with difficulty.

3. J. J—, aged fifty-five; Heart disease; suffered from Ascites and Anasarca. Was for a time much relieved, but finally sank. On examination after death, extensive disease of the heart was found to exist.

4. T. B—, aged twenty-three; Heart disease, complicated with Tubercular Phthisis. Experienced decided though temporary relief.—On examination after death, both heart and lungs were found diseased to such an extent as must have proved fatal without the intervention of dropsy.

5. G. B—, aged forty-eight; Anasarca. Died.—From neglect on the part of my clerks, I have not a report of the post-mortem appearances, but from his general symptoms I may state that this man's constitution was completely broken, and that there can be no doubt that he suffered

from extensive visceral disease, principally cardiac and hepatic.

6. E. J—, aged twenty-one, female; laboured under Anasarca; relieved; cause of disease, doubtful.—From not hearing further from this patient, I conclude that the relief was permanent, as when she left the hospital it was with the express understanding, that if there were any recurrence of her symptoms she was at once to return. In this case, so far as memory serves me, the cause was uterine irregularity.

7. W. H—, aged twenty; Albuminuria, with symptoms of General Dropsy. Cured.—In this case the cause of the disease was manifestly renal, the urine being loaded with albumen. He went out well, and has not since been heard of.

8. Hannah H—, aged twenty-three; laboured under ascites and tubercle of the lung: the former was cured, the latter very materially relieved. Cause of disease, pulmonic.

9. J. R—, aged twenty-one; Hydrothorax, with tendency to oedema of the lower extremities. Cured. Cause of disease, pneumonia with pleuritis.—When this young man first came under treatment there was general dulness on percussion over the whole of the left side of the thorax—the respiration being inaudible below the second rib anteriorly, and altogether absent in the interscapular spaces. The murmur was altogether absent at the lower lobes on every part of the left side. Before he left the hospital, percussion yielded a comparatively normal sound, and the respiratory murmur was distinctly audible at the lower part of the side affected, anteriorly, laterally, and posteriorly.

10. M. W—, aged fifty-two; Anasarca. Cured.—The dropsical symptoms manifestly depending on cardiac disease.

11. Alex. M—, aged fourteen; Anasarca, the cause in this case also being cardiac.—This boy left the hospital perfectly cured of his dropsical symptoms, and in other respects very much relieved.

12. W. P—, aged nineteen; General dropsy; cause, cardiac. Cured.

13. Charlotte B—, aged thirty; General dropsy. Died.—The autopsy showed very extensive organic disease of the heart.

14. Samuel N—, aged forty-two; General dropsy. Died.—The autopsy showed organic disease of the heart.

15. Eliza G—, aged thirty; General dropsy. Died.—Extensive organic disease of heart and lungs, with some enlargement of the liver.

16. Patrick C—, aged twenty; Ascites. Cured.—This may be regarded as one of the best illustrations of acute and idiopathic dropsy, following a suppressed discharge. This young man laboured under gonorrhoea, which subsided rather suddenly, when dropsical symptoms almost immediately supervened. No trace of any organic disease or serious functional disorder was discernible.

17. M. A. C—, aged fifty; General dropsy. Died.—Scirrhus disease of lungs and liver

to an unusual degree; also disease of the heart.

18. Joseph B——, aged twenty; Ascites, acute. Cured.—No organic disease; cause of dropsy, doubtful.

19. William K——, aged fifty; General dropsy. Cured. Cause, doubtful.

20. Ellen B——, aged seventeen; General dropsy. Died.—Extensive disease of the lungs and kidney, with considerable effusion into the right cavity of the pleura.

21. Edward B——, aged sixty-seven; General dropsy; relieved: cause of disease, cardiac.

22. William H——, aged eleven; Ascites and anasarca; cause of disease, renal, consequent on scarlatina.—From the beginning of this case, albumen in considerable quantity was found in the urine; the case, in fact, being one of disease of the kidneys, the dropsy being purely symptomatic, or consequent on such disease. In no case have I ever found the croton oil more valuable than in this, although the termination was fatal, the fluid having been several times completely removed from the abdomen, as also the œdema of the extremities. You must all of you remember that my prognosis was from the beginning unfavourable. On examination after death, both diagnosis and prognosis were fully demonstrated to have been well founded. As to the alleged severity of the treatment, most of you may remember that this poor boy, whenever he found any increase of abdominal distension, used to ask "if he might have a pill?" This, you are also aware, has been the case with many others.

23. Peter W——, aged sixty-nine; General dropsy; cured; cause, doubtful.

24. Daniel H——, aged fifty-seven; Ascites and anasarca; died.—No report of the post-mortem appearances, wherefore I place this amongst the doubtful cases, so far as causation is concerned.

25. Charlotte P——, aged seven; General dropsy; relieved; cause, renal.

26. Ellen H——, aged twenty-six; General dropsy; relieved; cause, very doubtful.

27. James G——, aged thirty-four; General dropsy; died; extensive disease of the kidneys.

28. Charles H——, aged forty-seven; General dropsy; died; disease of the kidneys.

29. Elijah E——, aged twenty-nine; General dropsy; much relieved; in fact, cured of the dropsy, but manifestly suffering from hepatic disease, the nature of which remains in doubt.

30. George H——, aged sixty-seven; General dropsy; cured; cause, doubtful.

31. Robert M——, aged forty-five; General dropsy, with phthisis; cured of the dropsy, and his chest symptoms decidedly relieved.

32. Ann A——, aged thirty-two; General dropsy, with phthisis; relieved.

33. John N——, aged forty-seven; General dropsy; cured; cause of disease, doubtful.

34. Reuben L——, aged thirty-one; General dropsy; relieved; cause of disease, doubtful.

35. Joseph P——, aged fifty-one; General dropsy; cured; renal disease.—This man suffered from ascites, œdema of scrotum, and also anasarca. His urine contained a large quantity of albumen, and yet he left the hospital perfectly well.

36. Frederick J——, aged thirty; General dropsy, being affected with ascites; œdema of the scrotum, and also œdema of the lower extremities, attended with a very high degree of erythematic inflammation.—This man's case deserves especial notice, not only on account of the extent of dropsy, but still more from the fact that after a struggle which it has seldom fallen to my lot to witness, he fully and perfectly recovered from the disease. In consequence of the extreme tension and inflammation of the scrotum, my friend, Mr. West, scarified the parts; after which sloughing took place to such an extent that the right testicle absolutely protruded, and was simply retained in its position by the spermatic cord. This man was a canal boatman; had indulged to a considerable degree in the use and abuse of ardent spirits. Wherefore, in the absence of albumen in the urine, I at once set the case down as one dependent on some derangement of the portal system. My diagnosis was by the result most fully confirmed. The man, as you all know, went out of the hospital perfectly recovered, and is at this time in his ordinary state of health. It may not be irrelevant to say, that the almost phagedænic ulceration and sloughing of the scrotum was overcome by the use of creasote in combination with the calamine ointment. I mention this now because, in 1840, I wrote in the *Medical Gazette* on Creasote as a Local Application. I have only to add, that further and extended experience has tended to establish what I then said of the value of this medicine; it having, in my hands, proved far more efficacious than even the nitric acid dressing.

37. Thomas W——, aged forty-nine; General dropsy. Cured. Cause, doubtful. No albumen in urine.

38. Thomas H——, aged forty-seven; General dropsy. Died. Cause, cirrhosis of the liver.

39. Thomas M——, aged thirty-two; General dropsy. Relieved. Cause of the disease, renal, as proved by the quantity of albumen in the urine.

40. Henry W——, aged nine; General dropsy. Died. Cause of disease, cirrhosis of the liver.

Now, gentlemen, on this case I feel called upon to make some remarks, however brief and unsatisfactory they may be. This poor child suffered from scarlatina two or three years ago. He was, for dropsy, consequent on and a sequela of this disease, in various London Hospitals; but with as little benefit as he derived from my humble efforts in the Queen's. If time allowed of it, I might dilate on this case to an almost unlimited extent. As it is, I must content myself with telling you that, after thirty years' experience, I have met with no parallel to it; nor do I believe that in the annals of medicine you will find a

case of cirrhosis recorded as occurring in a child of such an age. In this case, as in that already mentioned to you, I had the most satisfactory evidence afforded me of the value of creasote. This poor child's scrotum sloughed after being scarified; but was cicatrizing in the most favourable manner when death put an end to his sufferings.

41. Michael S——, aged thirty-two; General dropsy. Cured.—The cause of the disease in this case was indubitably renal, as, in the whole of my experience, I have never seen anything like the quantity of albumen met with. My diligent and intelligent clerk, Mr. Wilders, from time to time examined it, the result of such examinations showing, that in a given quantity of urine the albumen present occupied at least *two-thirds* of the whole bulk. This man had ascites, œdema of the scrotum, and anasarca to an intense degree. Under the treatment which I now feel justified in urging on your attention, he was perfectly cured of his dropsy, a recurrence of which, however, is nearly certain, as in his case the dropsy can only be regarded as symptomatic, his real disease being granular kidney and albuminuria.

42. William F——, aged thirty-seven; Ascites. Cured. Cause, hepatic, and most probably cirrhosis.—This man is now about to leave the hospital, perfectly relieved so far as his dropsical symptoms are concerned; but as I have no doubt of his suffering from organic disease of the liver, his dropsy may recur at any moment. In the interim, he is cured.

43. Ann P——, aged twenty-three; General dropsy. Died.—This is one of the most interesting cases that I have had in the wards of the hospital, as the poor young woman suffered not only from dropsy, but also from phlegmasia dolens, the latter being recognised only when the œdema and ascites had subsided; and then the true nature of the case was only ascertained after the most minute and searching inquiry. When admitted into the hospital, you all must remember that she laboured under *ascites* to an enormous degree—that her extremities were also anasarcaous. She died from pneumonia, her lungs being in a complete state of grey hepatization. In the abdominal cavity, there was not more than a pint of fluid. Her left leg was quite free from œdema, whilst the right retained the size and character of the disease mentioned. The post-mortem examination also fully demonstrated this fact, the *internal iliac*, *saphena*, and femoral veins being completely obliterated. No albumen was detected in the urine during life, wherefore I regarded the case as one of *acute idiopathic dropsy*, occurring immediately after delivery. In conclusion, and to show that this patient did not die of dropsy, it is only necessary to refer to the appearances met with on examination after death. These were the following:—

Necropsy, forty-eight hours after death.—Rigor mortis present to a great degree. Some effusion (less than a pint) in the abdomen. Left lung slightly infiltrated with pus; weight, 1 lb. 11 oz.

Right lung congested, and filled with mucus; weight, 1 lb. 9 oz. Liver enlarged; fatty degeneration to a slight extent; weight, 4 lb. 10 oz. Heart pale and flabby; valves healthy; incipient atheroma at commencement of the aorta. Spleen lighter in colour than normal; in other respects, appearance healthy; weight, 7 oz. Kidneys large and white, being the white kidney of Bright (?); weight, 7½ oz. each. The iliac, femoral, and saphena veins in the state already mentioned. Having been prevented being present at the post-mortem examination myself, I have merely to observe, that both lungs showed the grey hepatization. This I saw.

44. Ann S——; suffered from General dropsy. Died. Cause, heart disease.—In this case the greatest, though temporary, relief was afforded by the treatment.

45. Ellen B——; General dropsy. Cause, pulmonary and renal, with considerable effusion into right pleura.

46. Sarah E——; General dropsy. Died. Cause, disease of heart.

In the last three cases the ages were uncertain.

To the above, many cases attended with dropsical symptoms might fairly be added, and in most of which a greater or less amount of relief was obtained from the plan of treatment which it is now my object to recommend to your careful attention. For the reason already mentioned, I place, in a large number of dropsical cases, but little faith in the class of medicines termed diuretics, and more particularly where any actual disease of the kidneys exists.

My real desire is to impress on you the fact, that in the treatment of dropsy, our chief dependence must be on the judicious employment of purgatives, and, from my own experience of its efficacy, on croton oil, in preference to all others. If the sole object were the speedy evacuation of the effused fluid, then I would just as strongly advise the elaterium, and along with it the saline cathartics. In the treatment of dropsy, however, we have ulterior objects, as well as immediate and present advantage in view; such ulterior object being, not only to get rid of the abnormal fluid, but also, by increasing, instead of depressing, the absorbent power, to prevent its recurrence. This peculiar merit I believe the croton oil to possess. In milder cases of the disease I have found less drastic purgatives fully to answer the indication. This I state to you in order that you may not misconceive me so far as to imagine that croton oil is in my opinion a *specific* or *sovereign* remedy. Nothing, I assure you, is further from my intention or meaning. All I wish to impress on your minds is the fact, that where this medicine is exhibited with due caution and discrimination it is the most certain, safe, and efficacious of the class to which it belongs. In cases of dropsy, where manifestly of hepatic origin, I have found its utility amazingly enhanced by its combination with the chloride of mercury. How far such combination is desirable must be determined, not by any general rule, but

by a strict and jealous regard to the indications which each case presents. The reason of my want of faith in diuretics I may once again repeat to you—i.e., that dropsy is so frequently connected with, if not absolutely dependent on, disease of the kidney, that medicines which, acting on a healthy organ, would at once manifest their power over it, have, in the state of disease which so frequently constitutes the pathological condition in dropsy, no influence whatever.

There is one pathological question to which, in conclusion, I must allude—viz., the connexion between disease of the heart and kidney. We constantly find them associated; but which is entitled to be regarded as the cause of the other is by no means so easily determined. My experience, which is not now very circumscribed, leads me to believe that disease of the heart far more frequently precedes than it follows on disease of the kidney; and of this there is at this moment a very striking illustration in the wards of the hospital, in the case of the young man S—, who, you all know, has been under treatment for heart disease for weeks and months. Until within the last few days the kidneys acted in the most satisfactory manner, when for the space of ninety-six hours not one drop of urine was voided. By the introduction of the catheter, the bladder was proved to be perfectly empty; hence the inference was that the case was one of ischuria. I put him at once on the use of the turpentine, and, as in every similar case, that medicine, in the course of about nine hours, restored the secretion. I may simply add that, anterior to the suppression of urine, no trace of albumen was ever discoverable in the urine. You will now find the secretion of that peculiar dark colour which I have invariably and for many years found an infallible indication of the presence of albumen; and in this case, heat aided by nitric acid has fully demonstrated the fact. Here, then, is an unequivocal case of albuminous urine occurring as a sequel to heart disease. As this case must form the subject of a special lecture, I abstain from any further discussion of it at present.

Clinical Lecture

ON

HÆMORRHAGE FROM THE EYE.

Delivered at St. Mary's Hospital,

By WHITE COOPER, Esq., F.R.C.S.,

OPHTHALMIC SURGEON TO THE HOSPITAL.

GENTLEMEN,—The success of operations for cataract is occasionally marred by circumstances which cause much anxiety to the operator, and yet are either passed over in silence, or very slightly alluded to, in the published works on ophthalmic science. When perplexed by such cases, I have in vain turned over a dozen volumes in the hope of meeting with some satisfactory information for my guidance; and I propose to lay

before you the results of my experience on certain points, hoping that, if similar cases of difficulty occur to any of you, that experience may be of service.

The class of cases to which I shall principally refer, are not those which by their brilliant success gain the applause of the multitude; on the contrary, they may be regarded as failures so far as the restoration of sight is concerned; but it is these very cases which entail on the operator anxieties and tedious attendance for which perhaps he is ill-requited and even blamed, when the causes of failure are far beyond his control.

The first subject on which I shall touch, is *hæmorrhage from the eyeball*, after the extraction of cataract. This distressing occurrence has presented itself twice in my practice—each time in St. Mary's Hospital.

CASE 1.—On June 13th, 1855, I performed extraction on the right eye of Mrs. B—, aged seventy, who had long attended as an out-patient. Each eye presented a hard, amber-coloured cataract. The globes were hard and rather prominent, anterior chamber full; irides natural in colour; pupils ordinarily motionless, but dilating under atropine. She could distinguish light from darkness, and the shadow of a hand. Some years previously she had suffered from deep-seated pain in the eyeballs, with muscæ; and had long been teased with irregular gout.

From the hardness of the globes, and immobility of the pupils, I thought unfavourably of the case; but the woman's earnest entreaties that I would, at all events, give her the chance afforded by an operation, induced me to make the attempt on one eye. The section was completed with facility, the curette used, and with gentle pressure the lens escaped; a small quantity of rather fluid vitreous humour accompanying it. The flap being replaced, the lid was dropped, and I paused before taking a final look at the eye. After a few seconds, the patient clapped her hand to her eye, and exclaimed "Oh, what a pain in my head!" Removing her hand, I looked at the lid, and saw it rapidly becoming distended; gently raising it, to ascertain the cause of this unlooked-for circumstance, I found the section gaping widely, and a large mass of hyaloid pushing through it: in a second or two, a gush of blood poured from the eye, and flowed down the cheek.

I at once recognised the case as one of those generally described as rupture of the central artery of the retina, though I may here mention that, judging from the great flow of blood, and bearing in mind the small size of the vessel in question, I regard the choroid as the seat of the hæmorrhage; it was precisely such a discharge of blood as I have seen when the choroid has been wounded in removing a staphyloma, and very obstinate the bleeding may be under those circumstances.

The remedy which I have found most useful in checking hæmorrhage from the eye is pounded ice, folded in linen and laid on the lids. Little can be done in the way of pressure, the parts

being so exquisitely sensitive that it cannot be borne. Pounded ice was therefore applied to this patient's eye and three grains of gallic acid ordered to be taken every four hours. Notwithstanding the steady perseverance in these measures, the bleeding continued for thirteen hours, when it gradually ceased.

On the evening of the 17th, the patient being low and faint, a cordial opiate was administered; yet when the power of the circulation returned, to our mortification the bleeding recurred. Ice was again applied, and in half an hour the flow of blood finally ceased.

The application of cold was persevered in for two more days, when, suppuration of the globe commencing, poultices were ordered. The patient, who had been much reduced by the loss of blood, now required liberal diet and wine, and opiates were prescribed to allay the pain accompanying the inflammation and suppuration of the globe. Under this treatment the eye gradually became quiet and ultimately collapsed.

The second case occurred during the last winter, and was remarkable from the hæmorrhage not taking place till ten days after the extraction.

CASE 2.—The patient was a feeble old woman, who had been a great sufferer from rheumatism, and was so extremely deaf that it was with difficulty she could be made to comprehend a single sentence addressed to her. This infirmity made her very nervous and unsteady during the operation (which, you may remember, was performed on the left eye). From her extreme restlessness the section was made with difficulty, and the iris unavoidably wounded, though not to any extent. The lens was extracted with facility, and there was no escape of vitreous humour. I observed that the cut at the margin of the pupil bled more freely than usual, but did not attach much importance to this. Cold water dressing was applied to the eye for twenty-four hours, after which dry dressings were used. The patient was allowed liberal diet on account of her want of power. Being anxious that every opportunity should be afforded for firm union of the section, the eye was not disturbed till the seventh day. On that day, however, observing a little œdema of the upper lid, I opened the eye, remarking that there was probably serous chemosis and non-union. There was, however, then, no chemosis, the eye was pale, cornea clear, but the section not united. I decided on closing the eye again for some days, and ordered wine, with bark and ammonia. Examining the eye again on the tenth day, the section was still open, and serous chemosis existing; a solution of nitrate of silver was directed to be carefully applied once a day.

That evening, the sister of the ward was suddenly called to this patient, and to use her own expression when describing it to me, "the eye appeared to be hanging out on the cheek, with blood streaming from it." Mr. Staples was with the patient in a few minutes, and applied ice and a compress. It was evident that hæmorrhage

had taken place within the globe, pushing out the vitreous humour, and then escaping through the section. The hæmorrhage continued actively for about an hour, then gradually ceased, and did not return. Acute inflammation of the globe, with great swelling of the lids followed, and the patient became so prostrated that I was in some apprehension as to the result. The poor woman had so fixed her mind upon dying from the operation, that before entering the hospital she had had her coffin made and her funeral arranged. Happily her forebodings were not realized, and with great care and attention she gradually rallied, the eye sank and became quiet, and she left the hospital convalescent.

Such, gentlemen, are the particulars of two cases, the like of which I may never see again. So far as I can learn, one or two of such cases fall to the lot of most ophthalmic surgeons. Mr. Dalrymple told me that he had had two instances of hæmorrhage after extraction; Mr. Tyrrell had somewhat more, but they are rare.

The question now presents itself, are there any means of diagnosing these hæmorrhage cases before operation? Gentlemen, you will do well to regard with suspicion eyes presenting the following conditions:—Tense, hard globe, traversed by purple tortuous veins; sluggish or immovable iris; with perhaps one or two minute points of adhesion to the capsule of the lens; the existence of motes, flashes, and occasional dull aching at the back of the eye, with pains of the brow and cheek, the patient, at some time or another, having had gouty symptoms. You must bear in mind, however, that the pain, the muscæ, and other symptoms of disturbance, may have passed away, and will not be mentioned unless inquiry be made; yet their existence, in connexion with the other symptoms, often indicates a varicose state of the choroid and of the retinal vessels, with perhaps degeneration of their coats.

Dr. Gairdner has pointed out, that venous congestion is a common attendant on gout; my own observation coincides with this. A patient of mine, who lost his right eye from arthritic glaucoma, besides being a martyr to the gout in his limbs, underwent an operation on the throat; uncontrollable venous hæmorrhage took place, and he died. A few weeks since, I removed an eye from a patient of Dr. Gairdner's; though the ball itself was cleanly dissected out by means of scissors and a strabismus-hook (a proceeding which is generally almost bloodless), there was a profuse hæmorrhage at the time, and the bleeding did not cease for three hours, in spite of the constant application of ice; the patient, however, recovered so rapidly that an artificial eye was introduced on the seventh day, and borne perfectly well. I mention these cases, because I believe that when bleeding does take place from eyes which have been the seat of chronic arthritic inflammation, it is likely to be obstinate.

What is to be done to check the bleeding?—Pounded ice to the lid, gentle pressure if it can be borne, and gallic acid internally, are the best

measures. If the globe fills with blood, it will be utterly destroyed; but cases are recorded where the bleeding has been slight, and recovery of sight has taken place. It is, therefore, very important to check it promptly. If the patient be old and feeble, and the powers of life failing, stimulants—as brandy—may be absolutely necessary; but the less the better. The very depression of the circulation may be the means of arresting the hæmorrhage, whereas a too hasty administration of stimuli to keep up the pulse, may be the very means of defeating the main object. The room should be kept cool, the patient be carefully watched and kept absolutely quiet—the fewer persons admitted the better: the alarm and agitation of friends are an annoyance to the surgeon, and are hurtful to the patient.

The operation of extraction is by some writers thought inadmissible for gouty persons. Some years ago, whilst under this impression, I depressed a cataract in the left eye of a gentleman so crippled with gout that he walked with much difficulty. He was a large, heavy man, and I had misgivings, after the operation, that the lens might be displaced by his jarring movements. It was so; subacute inflammation followed, and the eye was lost. With the right eye I determined to adopt a different course—namely, to perform extraction. The time selected was immediately after a severe fit of the gout had passed away. Extraction was performed under chloroform, and so well did the patient progress that he frequently said that, so far as his own sensations were concerned, he should not have known that an operation had been performed. The wound united well, and on the tenth day after the operation this gentleman left town with restored sight. If, then, you are called upon to operate on a gouty person, do so, if possible, soon after the attack, and especially avoid that time when malaise, irritability of temper, and other well-known symptoms, point to an impending fit. There is, however, a class of persons in whom I contemplate an operation with great misgivings—I mean those afflicted with “suppressed” or “irregular” gout, where the diathesis exists, but the system is never relieved by a regular fit. Such patients require careful preparation for an operation on the eye, and it should only be performed when the weather is fine and mild and the wind not east. Mr. Middlemore recommends a seton being placed in the arm of a gouty person a week before the operation, and the suggestion is not to be lost sight of.

In my next lecture I propose to speak of Spasms of the Eye after Extraction.

Clinical Lecture

ON

HÆMATURIA AFTER SCARLET FEVER;

ANASARCA; CONVALESCENCE.

By WILLIAM R. BASHAM, M.D.,

PHYSICIAN TO THE WESTMINSTER HOSPITAL, AND LECTURER ON THE PRACTICE OF MEDICINE.

GENTLEMEN,—In the last Lecture I alluded to a point of much pathological interest arising out of the investigation of these cases of hæmaturia and renal disturbance; whether this morbid sequel simply arose from the arrest of the cutaneous function during the period of the desquamation of the cuticle, or whether it might not be traced to the imperfect elimination of the febrile poison at the exanthematous period, and referable therefore to a state of the blood imperfectly purified.

The case of Ralph W——, aged eleven, bears materially on these points; for he has been in the hospital throughout both stages of the fever; indeed the fever showed itself while the patient was in the surgeons' wards, and he was passed into Burdett ward on the first appearance of the febrile symptoms. He was admitted November 13th. He complained the night before of feeling ill, and early in the morning of the 13th he was seized with violent retching, vomiting, and purging. The tongue was of a bright red and moist, and the papillæ being much enlarged. He vomited frequently during the day, and complained of pinching pain in the abdomen. The pulse was small and weak. The case was thought one of simple gastric disturbance, and he had effervescing medicine and some aromatic mixture.

On the 15th, two days after the first symptoms, there was sore-throat, the fauces and tonsils having the brilliant scarlet redness characteristic of the scarlet fever, and the tongue had acquired the well-known strawberry aspect. In the course of the day a bright efflorescent rash appeared on the face and throat, extending thence to the trunk, and during the following days occupying the whole body and extremities. The irritable state of the stomach and bowels ceased with the appearance of the eruption. He was placed on the chlorate of potash mixture.

On the third day of the eruption, the colour had become dusky, and there was no diminution of the sore-throat; on the contrary, there was a disposition to ulceration, with the formation of a dirty, tenacious, viscid secretion. The throat was cleansed frequently by means of a sponge saturated in the chlorine mixture.

On the 21st of November, the eruption had entirely disappeared, and the throat presented a favourable appearance, but there was no appearance of desquamation of the cuticle.

On the 23rd, the eighth day of the fever, slight cuticular exfoliation appeared on the arms, but no further appearance of desquamation was observable. His convalescence progressed very slowly.

The appetite continued indifferent; the tongue had become pale; the aspect of the patient was dull; the bowels acted regularly, and the urine was abundant and natural. The patient during this period was placed on bark and nitric acid, and the diet improved; but there was no inclination for food; the little fellow was lethargic and dull, and indifferent to everything about him, and had no inclination to get up. There was no cough; the respiratory sounds were natural, and, with the exception of the signs of a tardy convalescence and defective appetite, there were no symptoms of consequence.

On the 7th of December, twenty-two days after the first appearance of the scarlet rash, the surface of the body became generally anasarcaous; there was some heat of skin and acceleration of pulse; the tongue was pale and moist; the face was cedematous, as well as the trunk and extremities, but there was no ascites. He complained of aching pain across the loins, and the urine was scanty and highly charged with blood. The breathing was somewhat oppressed and short; there was frequent cough, without expectoration; the respiratory sounds were very faint throughout the chest, and in the large tubes some trifling sibilus. He was cupped to four ounces from the loins. Ordered the compound jalap powder, one scruple, and the diaphoretic mixture; to be clothed in flannel, and a hot-air bath administered. The urine was microscopically examined, and fibrinous casts entangling blood discs were abundantly visible, together with free blood corpuscles. The treatment made little impression on these symptoms for the first six days; throughout this period the hæmaturia continued and the anasarca increased, so that both upper and lower extremities became extensively cedematous. He had warm-baths and brisk purgatives, with the compound jalap powder.

On the 20th of December, the urine became more abundant, had lost the red, sanguineous character, and had acquired the smoky tinge observable in the milder forms of scarlatinal dropsy; moderately albuminous. The microscope exhibited tubular casts; more transparent, and containing a few blood discs, with glandular epithelial cells. The tincture of the sesquichloride of iron was now given. The anasarca gradually disappeared; the urine became clear and natural, and when examined, on the 4th of January, was free from all appearances of desquamation products, whether of albumen or casts; the patient rapidly improved, soon lost the flabby, sodden aspect of dropsy, and was discharged convalescent.

This case teaches us, that no precaution taken during the period immediately subsequent to the exanthematous fever can avert the morbid sequelæ in certain instances. The child never left the ward from the first day of the attack. The temperature of the ward is uniform, never descending below 60°. The type of the fever was that of scarlatina anginosa. The ushering in of the disorder was more than usually severe, the vomiting and purging of the days preceding the eruption

being disproportionately frequent. The eruption exhibited in its course nothing irregular; it perhaps may be said to have receded too early. The sore-throat was not more severe than in analogous cases. The irritable state of the stomach and bowels departed as soon as the eruption came out. On the whole, however, it was very evident that the type of the fever was the severest form, excepting only that dreadful form, the scarlatina maligna; and, moreover, that the exanthematous period had not adequately eliminated the febrile virus. This became apparent at the period of desquamation, which, in ordinary cases, proceeds *pari passu* with convalescence; but a trifling exfoliation of cuticle took place, and the progress of recovery lingered, as though some morbid material still lurked in the system; nor can we doubt that it was so, for secondary febrile symptoms manifested themselves, accompanied by hæmaturia and general dropsy; congestion of the respiratory organs, expressed by cough and dyspnoea, were also amongst the disturbances indicative of some widely-acting morbid influence. The hæmaturia was severe, and continued unaffected by the measures employed for the lessening of the local and internal congestions. Cupping, active purging, diaphoretics, and warm baths were administered, but the hæmaturia continued unabated for seven or eight days, and then, apparently having accomplished the complete depuration of the system, it subsided, leaving no other morbid condition to be combated but the impoverished blood and the accompanying debility.

It is interesting to observe how rapid is the restoration to health, how speedily ferruginous preparations seem to enrich the blood with red corpuscles, so soon as this cleansing process of the secondary fever has become complete. The hæmaturia in these cases, when severe, would seem to threaten the organic integrity of the renal organs; but, if careful microscopic examination be made from time to time, and the character of the casts carefully noted, these will be seen as fibrinous moulds of the larger tubes, containing blood-discs and scattered epithelial cells. As anasarca diminishes epithelium becomes more abundant, and gradually disappears as convalescence progresses; the albumen, at the same time, daily becomes less, till, at length, all vestiges of it are lost, and the urine exhibits all the qualities of the healthy excretion. It is when the desquamation of the renal epithelium does not diminish the urine continuing albuminous for weeks after the secondary attack, the specific gravity of this fluid becoming low, the urinary constituents reduced to a minimum, the casts becoming more and more transparent and fatty, the epithelium becoming more granular with scattered or grouped fat corpuscles; it is under such circumstances as these that an unfavourable prognosis must be formed, and fears entertained that permanent granular degeneration of the kidneys has commenced.

Groonian Lectures.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS, 1857.

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LECTURE I.**ON FREQUENT MICTURITION.**

MR. PRESIDENT,—In teaching our art, the plan usually adopted by professors consists in describing each disease in full: symptoms are collected, post-mortem appearances detailed, and the appropriate treatment and diagnosis dilated upon.

This method is valuable in affording us the means of comparing any particular case with the type of the class to which it may belong; imparting a kind of knowledge which all must acquire who are desirous of becoming good diagnostic physicians. There is another method of instruction, however, which may be most usefully combined with that just described.

It consists in selecting for consideration some symptom which experience teaches us to have an important meaning, and to trace it up to each of the causes to which it may possibly be due. At the bedside we meet with symptoms not only of varying character, but of varying value; and the more important are sometimes the least regarded by the uninitiated, inasmuch as they may not be amongst the more painful.

There are some symptoms which, if they be properly studied, restrict the inquiry within narrow limits, while others bear so general a relation to disease that the mind fails to accomplish the analysis which it easily makes where the less general question is involved. It may be asked, how can we acquire this valuable quality of fixing on these more important symptoms—these indications which direct us more immediately to the truth? This is to be attained by experience only, and it is by its possession that some practitioners are enabled (unconscious of the intermediate mental processes) to detect apparently at a glance that which others may have sought for in vain. The physician's diagnosis is the result of a study of symptoms; one by one he values them, and compares them with some set or class of symptoms which he knows constitutes an especial form of disease. Some inconsistency, perhaps, arises while comparing the symptom he has first selected; in a moment, the train of thought changes. The question, then, arises whether it be consistent in its adjoined phenomena with some other class. The comparison is made again; and eventually an accordance is established leading to the detection of the true nature of the case. Rapidly as this must take place in some minds, still it must needs occur; and this reasoning back from symptoms is what the experts are constantly practising. This method I shall now adopt as the most na-

tural in treating of disease before an auditory already well versed in its general history; and I have selected for consideration, on the present occasion, the symptoms of frequent micturition. This indication, which, under the name of "irritable bladder," is not always so carefully considered as it should be, is productive of extreme misery when present in a marked degree; but there are minor degrees which do not greatly interfere with comfort. The accession of the symptoms may be gradual, and the habits of life of the patient not such as to be materially interfered with by frequent calls to pass urine. On the other hand where social habits or occupation make it desirable that the urine should be held for a few hours, the symptom assumes considerable importance to the patient, however trivial the cause may happen to be, or however easy the cure. According as distress may be produced or not, so we may become acquainted with the symptom, either as the prominent complaint of the patient, or as an incidental circumstance to which he attaches but little importance. Owing to the latter condition, it very frequently happens that this indication is overlooked by the practitioner, so that an obscurity hangs about the case which would at once have been dissipated had the symptom caused more suffering.

I must premise that, in treating this subject, it is not my intention to enter upon the various diseased states of the prostate gland, which we know may produce irritable bladder. This part of the subject is rather in the province of the surgeon than the physician; and digital examination, in many cases, will suffice to determine the diagnosis. As compared with the bladder and the kidney, however, the prostate is far from a common cause of the symptom; and the same may be said of the uterus, which, under certain condition of misplacement, produces great bladder irritation.

Frequent micturition, while it may indicate severe inflammatory mischief in the bladder, may, on the other hand, be a purely sympathetic affection, and it is in this latter case that most difficulty occurs in tracing the symptom to its cause. The separation of the subject into these two divisions is not difficult, since inflammatory disease shows a condition of urine not observed when the purely sympathetic affection exists. When frequent call to pass urine is connected with cystitis, by whatever cause produced, the urine contains excess of mucus, and nearly always pus, and this latter exists in the excreted urine, partly transformed into *adhesive* or *ropy mucus*. Blood may be seen also, under some conditions, colouring the adhesive mass in the chamber vessels. When the frequent micturition is merely sympathetic, and indicative of some diseased state in a distant part, the urine is not of this character. It is often clear, or merely deposits the urates, and if any other sediment occur, it is not ropy mucus. The long-continued irritation may, however, eventually involve the bladder; then, of course, the first described set of appearances will be observed. We

will assume that we have a case showing the symptom of frequent micturition, and on examining the urine, we find ropy mucus as a deposit. This is occasionally coloured by blood. Albumen is also dissolved in the urine, owing to the presence of pus.

When this condition has been recognised, we may conclude that the bladder is inflamed, and that one of the three following cause is in action :—

1. Calculus in the bladder.
2. Gonorrhœal inflammation of the bladder.
3. Partial paralysis of the bladder.

The symptoms connected with the first-named cause are so familiar to the profession, that they need not be enumerated here. The points of difference between them, and the symptoms characterizing the two other states are obvious enough when calculus in the bladder produces its full effect. Fortunately, however, for suffering humanity, this is not always so, and then the practitioner may find difficulty in forming a diagnosis. Exploration by sounding by no means sets the question at rest if a negative result be obtained. Calculi, as we all know, may escape detection, even when the most skilful and practised hands hold the sound, and yet at no very remote date from such an exploration, may be easily demonstrated, both to the touch and to the ear, by anyone who may have the opportunity of making an examination.

A calculus in the bladder sometimes produces scarcely any symptom whatever, save frequent micturition, with occasional pain at the end of the penis. Again, sometimes, even these symptoms exist but in slight degree, and we have hæmaturia complained of, with scarcely any other indication, the patient being able to bear a good deal of jolting without such pain as usually attends vesical calculus. This is especially observed with mulberry or oxalate of lime concretions. But the state to which I would especially draw attention is that in which the calculus causes hardly any symptoms. Such instance are rare, but we now and then hear persons complaining of frequent call to pass urine, and little else; and on examining the urine the indications of cystitis are sufficiently obvious. The frequent micturition is evidently, then, caused by inflammation of the bladder, but on what this depends is by no means so easily determined. If the patient be sounded, a calculus may perhaps be detected, but if it be not found other causes for the cystitis are sought for, and of course sought for in vain. It becomes of the greatest importance, then, to acquire the power of discriminating in these cases. May it not still be a case of calculus, notwithstanding that no calculus has been found? Much depends on our answering this question correctly. In order to do so we must look to the history of our case, and if we can exclude the two other causes for cystitis—viz., the remains of gonorrhœal inflammation, and the presence of irritating urine, owing to the existence of partial paralysis, we may feel great confidence in declaring it probable that cal-

culus exists, and that the exploration by sounding has not done all it may hereafter accomplish.

Of the two other states above alluded to as capable of producing like symptoms, that of gonorrhœal infection is generally easily ascertained by inquiry into the more early history of the case. I am not speaking here of gonorrhœa with discharge, spreading inflammation to the neck of the bladder, and causing acute suffering. This state of matters cannot well be mistaken; but I allude to cases which arise after many weeks' cessation of gonorrhœa, when, with little or no discharge, gonorrhœal inflammation attacks the bladder. The history here might tell us all, but it so happens that the history is not always forthcoming, and the indications may be, and often are, regarded with anxiety, as possibly connected with a calculous tendency, frequent micturition and ropy mucus in the urine being the prominent symptoms.

A case of this kind occurred to me not long ago. A gentleman who had been the subject of gonorrhœa, and who had recovered from all the first effects of the complaint got married. Shortly after he became the subject of irritable bladder; ropy mucus appeared in the urine, occasionally tinged with blood, and this with a slight loin pain, was all we had to guide our diagnosis. The history, however, sufficed to place the disease before us in the true light.

I shall now notice the third condition giving rise to frequent micturition, and to urine impregnated with the results of inflammation—viz., partial paralysis of the bladder. This is a state which very often commences insidiously. The patient does not feel that he has but partially evacuated his urine, and it is only when the bladder becomes inflamed, owing to the irritation produced by retained and stale urine, that frequent micturition causes him to feel anxiety. He now, perhaps, examines, and finds his urine is passed in an opaque, instead of a transparent state, and that a layer of mucus settles in the chamber vessel. It constantly happens that these cases are not diagnosed correctly for some little time, and instruments may be passed in the belief that the cystitis arises from calculus.

Here we depend almost entirely upon history, and on inquiry we may learn that before the appearance of symptoms our patient had been obliged, on occasion, to hold his urine for a great length of time. He may not have observed after this that he passed but little urine when he had an opportunity of emptying the bladder, nor may he have connected any symptom whatever with the above condition. Sometimes the history is more suggestive. Complete retention may have existed at some remote date, owing to a distended state of the bladder. An instrument may have been passed, and the urine drawn off, and the patient may not have suffered any symptoms for many months. Then the complaints arise which we are now considering. If the case be neglected, another inconvenience occurs which should at one determine us. This consists in the urine dribbling away in small quantities, but yet incessantly.

Frequent micturition and the urine of inflamed bladder, if taken in connexion with the above history, will serve at once to distinguish these cases both from calculus and from gonorrhœal cystitis. They are often at first mistaken for the former, and nearly all the patients I have seen with this affection have had the sound passed, and sometimes by more hands than one, without any light being thrown upon the subject.

Before proceeding to the second division of my subject, I would say a few words respecting two forms of cystitis noticed by authors. First, as to cystitis occurring more or less in the character of an idiopathic affection, as caused in irritable constitutions by exposure to cold. This disease has been described, I believe, only because some mechanical or chemical cause has been overlooked. Secondly, we hear of a gouty cystitis. This, which has been described as an immediate consequence of the gouty diathesis, may, I believe, be more correctly regarded as secondarily produced by calculous affection. The irritable bladder in some gouty persons may be clearly traced to sympathetic irritation produced by renal calculus, and cystitis may eventually occur; but I am by no means inclined to believe the bladder liable to a specific gouty inflammation. One argument which has been used in favour of the specific nature of this inflammatory state, is founded on the fact that relief has been obtained by the administration of colchicum; and were this drug quite inefficacious in all other inflammations, and invariably successful in relieving gout, some weight might be attached to the argument; but in the present state of therapeutical science it bears but little on the question.

Before considering the causes of *sympathetic* irritation producing frequent micturition, I must refer to a question which may very possibly suggest itself to some of my hearers. It may be thought that though sympathetic affections may require analysis with regard to the symptoms under consideration, frequent micturition must be expected in every disease connected with an inflammatory state of the urinary apparatus: in point of fact, that it is a necessary concomitant. This, however, is by no means the case; and there is one cause for this form of urine indicative of inflammation requiring more especial notice, as not the slightest irritability of bladder need exist, though the urinary symptoms are otherwise closely allied to those just described. This happens when a calculus becomes fixed in the ureter. Under these circumstances there may be merely such sensations about the urethra as are easily accounted for by the altered nature of the urine, which is generally highly alkaline, and deposits the earthy phosphates if kept. We are well aware how irritating the presence of calculous matter is in the kidney, and in the bladder; and so long as the inflammatory state of urine is observed, we always expect frequent micturition. In the case I now refer to, however, the calculus gives little inconvenience. The history of its first leaving the kidney may be remote, but inquiry

will lead to the point, and severe pain be described as having occurred at some date antecedent to the appearance of mucus and pus in the urine. I doubt not that some of my hearers may have seen a case or more in which post-mortem examination has shown the ureter of one side blocked up by calculus, the ureter above greatly distended, and the organ probably undergoing gradual destruction.

Having now spoken of cases of frequent micturition in which the urine gives indications of cystitis, I will proceed to consider the other division of the subject, including those cases in which the secretion is not so materially affected, and which arise from sympathetic irritation of the bladder. This class is a somewhat numerous one. One of the most common causes for the symptom exists in the presence of kidney disease, and especially that known as morbus Brightii. Here the frequent micturition for the most part occurs at night, and the patient may disregard the inconvenience for a length of time. Scarcely any other symptom of the disease may be present, and if this one be not sufficiently valued by the practitioner the malady may escape detection altogether. There may be slight dyspepsia, and perhaps a somewhat anæmiated look. The urine may be clear, and no deposit indicating cystitis present; but the bladder is irritable. Under these circumstances, the question as to the possible albuminous condition of the urine should at once suggest itself. If this be detected, then it becomes necessary to deal with the question of albuminous urine in its relations to disease, and to determine whether we may refer it in this particular instance to granular degeneration of the kidney. What is it necessary to do in order to effect this? I need not remind my hearers that albumen may be present in the urine merely as a concomitant with pus or with blood. The first step, therefore, should be to ascertain whether or not either or both these be present, and microscopic examination is rarely necessary in order to effect this, as far more than a microscopic quantity of the corpuscles of these fluids must be mingled with the urine to render it albuminous in any marked degree. We will assume that these sources of fallacy are removed, that the urine contains the serous part only of the blood, as in morbus Brightii, and now the question may be asked, upon what other states may this depend? This is an old query. It was the difficulty which occurred to the minds of practitioners when Dr. Bright's discoveries were promulgated. It was thought unlikely that albuminous urine should possess such especial and exclusive significance. Many assertions were made tending to lessen the value of the indication; and had there been any amount of truth in the allegations, albuminuria would long since have been recognised as a very common symptom, existing in numerous diseases, and even occurring under conditions scarcely to be distinguished from perfect health. Thus it has been said that eating pastry or drinking milk in quantity will cause albumen to appear in the urine,

and a mercurial course has been supposed to produce the same effect. Some believe it a common concomitant of ordinary colds, and as easily produced by any interference with the function of the skin. The attention I have paid to the subject, with ample opportunities for experience, enables me very confidently to contradict the above statements; but it may not be out of place to mention one or two other objections to the exclusive nature of this indication, possessing more claims to notice.

Albumen appears occasionally in the urine during gestation. Some women have been known to excrete it during every pregnancy, and no evidence has subsequently appeared to prove the existence of diseased kidney. This fact was first noticed by Dr. Lever. Albumen, again, may nearly always be detected in the urine of women suffering from puerperal convulsions. Again, during the progress of cholera asphyxia, the urine frequently becomes albuminous. It is said to assume this state also in typhus; but if this ever occur it is a rare concomitant of that fever, and if it be present it will be well to look to the kidney.

The conditions just described are obviously such as but little interfere with the diagnostic value of albuminous urine, inasmuch as they are easily recognised.

I would, lastly, notice those statements which, were they proved by the facts adduced, would entirely destroy the value of albuminous urine as a guide to diagnosis. A writer of considerable chemical acumen, but evidently ill-informed in the phenomena of disease, and who, like many other chemists who have meddled with pathology, has done much to confuse a very important subject, has declared that "albuminous urine has now been so frequently observed in numerous diseased states of the organism, independent of Bright's disease, that the idea has long been abandoned that granular degeneration of the kidneys always occurs where we have albuminous urine." So far so good. If we except the word numerous, what I have already said is quite in accordance with the view propounded; but our author goes on to say, that albumen exists in the urine of blooming health, and, without giving us the sequel, contents himself with describing albuminuria and robustness. The case (if correctly reported) is that of a confirmed, but perhaps early, stage of morbus Brightii. While suffering from a mild catarrho-rheumatic affection, the author found a trace of albumen in his own urine. Next we have a case quoted in which the presence of albumen may have been simulated by phosphates; but even if we allow that albumen was present, there is no account of the after-history, nor of the post-mortem, to set the question at rest as to the existence of morbus Brightii. The patient, in this last case, was the subject of pneumonia, a disease which often complicates chronic albuminous nephritis, and in all probability, if albumen really existed in the urine, this patient had a degenerated kidney.

We next have two cases which are almost cer-

tainly true morbus Brightii; the one regarded by the author as rheumatism, the other as dropsy with albuminous urine, but *not* with kidney disease, because, as he writes, "*the patient complained of no pain (even on pressure) in the lumbar region.*"

These statements, which are to be found in the writings of the late Professor Simon, of Berlin, have done much to interfere with progress. The merest tyro of our schools could have told our author that patients with morbus Brightii scarcely ever complain of lumbar pain—that it is by no means to be expected, even in the severest cases—that its presence is the exception, its absence the rule; and that the same remark applies to pain produced by pressure over the region of the kidneys.

The carefully collected records of hospitals have now satisfactorily determined this question; and it may be confidently stated, that albuminous urine indicates either a degenerated kidney, or some state of the organ preceding degeneration; and that the sources of fallacy are not material, consisting as they do of conditions which can be easily recognised—such as pregnancy, puerperal convulsions, and cholera asphyxia. I would add a precaution here, however—viz., not to draw any inference from the examination of urine obtained after death, when albumen may be often detected as a result of transudation.

Among the causes for frequent micturition (irritable bladder) we find brain affection has been enumerated; but from the accounts we read of these cases it appears highly probable the cerebral condition described was merely one of the concomitants of kidney disease, which it was not possible to recognise before medical literature had been enriched by the writings of Dr. Bright, and before his discoveries had been promulgated. Surgical writers have spoken of this form of irritability.

There is a state of urine to which I would now direct attention, as occasionally productive of frequent micturition, but which easily admits of relief. It consists in an increased acidity generally observed in gouty subjects. Uric acid is occasionally seen as a deposit, but not always so at the commencement of the malady. These cases sometimes occur in connexion with albuminuria, and the fact is an important one, because it seems to constitute a point of difference in the views of those whose acquaintance with the subject of albuminuria is profound, and whose experience has been most extended. The question lies thus:—If a patient passing uric acid pass also albuminous urine, and if these conditions continue many months, is the case necessarily one of kidney degeneration? M. Rayet, with whom I had a most interesting consultation last summer, holds that the gouty or uric acid diathesis may affect the kidney, causing a degeneration of its structure (Bright's disease—"néphrite chronique albumineuse" of the French), or it may, on the other hand, cause a discharge of albuminous urine (in consequence of the uric acid crystals irritating the tubules), without any degeneration of the kidney occurring as a consequence. This latter state

may last, it is said, for months, and, according to this doctrine, even after some year or two, the case is not to be condemned as necessarily connected with degenerate kidney. The concurrence of uric acid deposit with albuminous urine was noticed by Dr. Prout, who even went so far as to believe in a necessary connexion between the two. Uric acid, however, is so familiar to us as a deposit without albuminous urine that this necessary relation cannot possibly exist. When, however, the two happen to occur together, we have a condition admitting of the two interpretations just given.

The persistence of albumen month after month has been considered by Dr. Bright and his followers as necessarily indicative of organic change in the kidney, and that this is generally the case cannot be denied. We see the fact constantly proved in our hospitals; but the question still lies open as to whether the uric acid crystals may not cause albuminous urine to appear for many months, or even longer, by irritating the tubules. We frequently hear of cases of albuminous urine going on for years and years without any very serious inconvenience to the patient. We hear also of cases which have been cured, the patient remaining well for years. Let us consider whether we are to believe in this less hurtful albuminuria, and whether the cases which appear to admit of relief are those in which the irritation of uric acid crystals is causing the albuminous discharge, without any organic disease being necessarily present in the kidney. Since my attention has been directed to the point, I have had two opportunities of observing albuminuria in connexion with the uric diathesis. The albumen was present in abundance, but disappeared under alkaline treatment in one case almost immediately.

Here we may have had an early case of Bright's disease in a gouty subject, which was relieved by treatment, or, it may have been a case of irritation of the tubules by uric acid, as described by M. Rayer. For my own part, the rapid relief from alkaline treatment inclines my belief strongly to the latter view, and it appears probable, that though gouty subjects are prone to Bright's disease, they yet may pass albuminous urine from another cause.

But what are we to say to cases in which the albuminuria persists for months or years? Are we to believe in the possibility of this discharge of albumen continuing, without the kidney being organically diseased? My conviction was strongly against such a belief, but that opinion has been somewhat shaken of late.

It has always been a puzzle to explain the old cases referred to, in which morbus Brightii is borne with apparent immunity, and I am by no means satisfied but that an explanation may be found for this apparent anomaly in the condition noticed by M. Rayer.

I have at present a patient under care, who has passed albuminous urine for six years and more, whose state of health, so far as we can judge, is perfect. Strong, active, and energetic, she repu-

diates the idea that she is an invalid. She is of a gouty family, and has occasionally passed uric acid. The urine has never been of low specific gravity, no fibrinous casts have ever been detected, and there is no evidence whatever that the blood or other fluids have become degenerated in any way. Alkaline treatment has answered well in this case. Under its use, the albumen has disappeared for days and days together, and though it is still occasionally found, it is always in very small quantity.

If ever a case existed capable of clearing up the difficulty I have alluded to, this is the one. Can the gouty diathesis, with its uric acid crystals, be causing the albuminous urine, or have we a case of true morbus Brightii? Post-mortem examination alone can determine this.

The next cause for frequent micturition which I shall notice consists in the presence of calculus in the kidney. Here the irritation is often most excessive, and there is the greatest difficulty in persuading the patient that his bladder is not diseased. These cases are generally amongst the most unsatisfactory that can fall under our care. Little is to be done, and doing little or nothing is often a hazardous step as regards the fame of the practitioner. You cannot expect the suffering and ignorant patient to believe in your declaration that he must still suffer on till some lucky accident either expel the calculus or enable it to become encysted, and he will fly to those who, in accordance with his own views, may proceed to treat him for disease of the bladder. I have known these cases regarded as dependent on irritation of the neck of the bladder caused by stricture, and have seen the most lamentable results brought about by the violent measures resorted to for relief.

The correct diagnosis is not very difficult. The history generally tells of hæmaturia, probably at some remote date, and of occasional loin pains and uneasiness. The general health at first is but little disturbed. The urine shows none of the indications of cystitis, is generally clear at first, but in old cases it becomes slightly clouded. This cloudiness is dependent on the presence of pus, which exists in small quantity. We must not expect to find hæmaturia a warning symptom. In many instances it is certainly present, and our diagnosis is then more easily made, but if hæmaturia do not exist at the time of our seeing the patient, and when we have an imperfect history to guide us, the case cannot be determined so easily.

Frequent micturition, with small quantities of pus in the urine, loin pain, and lassitude, if we have an early history of hæmaturia, should guide us to diagnose renal calculus; and even if frequent micturition and a small quantity of pus be the only symptoms, we shall generally be right in giving the above opinion, even if history fail to afford us evidence of hæmaturia. The presence of a small quantity of pus in the urine would appear easily explained in its relations to renal calculus.

The hollowing out of the nephritic structure, which we find occurring in order to make room for calculi about to become encysted in kidneys, must have been effected by a gradual process of disintegration, and this we know is preceded by inflammation. The purulent discharge would thus seem to attend the formation of a convenient cavity for the lodgment of the calculus. So long as this action is going on, the patient will pass pus in the urine, and it may be some years before matters are adjusted. The constitution has much to go through. A scrofulous taint leads to abscess in the kidney and death. The more fortunately constituted generally do well, provided they can be induced to avoid the catheter and the sound.

In speaking of the condition of the urine in this calculous affection of the kidney, I have made use of a somewhat indefinite expression—viz., “a small quantity of pus.” By this I would wish my readers to understand an urine depositing a yellowish-white sediment, but not in such quantity that the patient’s attention need be attracted by it. It renders the urine but slightly turbid as it is passed, or when the deposit is shaken up in it.

This is the general state of things when nephritic calculus is encysting, or when it fails to find its way down the ureter, provided constitutional causes do not interfere to produce suppurative disease which may appear in the form of pyelitis or of general abscess of the kidney. This purulent impregnation is constant, and if it fail to show itself, so as to be evident to the unassisted eye, the microscope rarely fails to demonstrate the presence of pus so long as the bladder is irritable.

There is a cause for frequent micturition so nearly connected in its symptoms with that last noticed, that it naturally suggests itself in this place. It consists in a state of kidney known as strumous kidney, or phthisical kidney, as some authors have designated it. If calculous disease develop itself in a strumous subject, we find very early that abscess results, but in all subjects some amount of pus may be expected during the time of encysting. In phthisis of the kidney, however, the bladder becomes irritable, without any evidence of a calculous disposition; and we find that pus can be clearly proved in the urine. The symptoms are generally at first considered to depend on calculus, and it too often happens that the disease has made great progress before the real state of the case becomes evident. The symptoms are at first nearly identical with those of nephritic calculus. The same degree of sharp lumbar pain, however, is not present, and there is no history of hæmaturia; but the symptoms presenting themselves at the time of examination bear a striking similarity; and if the previous history be not ascertained, a diagnosis is next to impossible. It is both for the advantage of the practitioner and of the patient that this distinction should be early made; for if calculus be the exciting cause, of course our prognosis will be more favourable.

2—VOL. II.

The two points for consideration are—1st. The diathesis of the patient. 2nd. The history as to hæmaturia. If frequent micturition and purulent urine, such as I have described, be present in a strumous person, and we have no history of hæmaturia, we may diagnose phthisis of the kidney. If frequent micturition and purulent urine coexist with a history of hæmaturia, then, in all probability, there is calculus. We must not conclude, however, that because calculus is present we have no fear of the worst results, for if the patient be of strumous habit, abscess may result as a consequence. In all cases, however, the history of hæmaturia is an advantage, inasmuch as even should the patient be strumous, the calculus may be voided, and the exciting cause of mischief being thus removed, the kidney may recover itself, and the patient do well.

It is not many months ago that I saw a remarkably strong young man suffering from loin pains and general malaise, in whose urine small quantities of pus were nearly always present. The case interested me much, and I looked with some anxiety for the previous history. There was a strumous diathesis; and, from the moment I made my examination, I felt certain that all depended on the history involving hæmaturia or not. In any case, the strumous diathesis made it a serious affair; but, in the absence of hæmaturia, the only conclusion which could be arrived at was that the nephritic mischief had resulted purely from struma. As phthisis of the kidney progresses, we may have enormous quantities of pus evacuated. It is only therefore, to the commencement of the disease that my remarks apply; when, with frequent micturition, we have the slightly purulent secretion simulating calculous mischief.

LECTURE II.

MR. PRESIDENT,—I now come to the consideration of hysteria as a cause of frequent micturition. Much has been said of the practices adopted by the more juvenile of the opposite sex in order to excite the compassion of those around them. While this perverted state of moral feeling prevails it may sometimes happen that our patient complains of too frequent call to pass urine. This may be true or it may be false. Again, if true, it may be attributable to the hysterical condition, or it may be the result of other and more tangible disease. The task in cases such as these is no easy one. Sometimes we may detect deceit by according completely with the patient, taking her part, as it were, and leading her to believe we are the dupes of her ingenuity. If she be deceiving, her next step will be to encroach on our presumed credulity, and she may describe some fresh symptom which may serve to lead to her detection.

Thus such persons have been known to present pieces of brick to the medical attendant, representing them to be stones passed from the bladder. My friend Mr. Lonsdale lately met with such a case. The irritability of the urinary organs will be spoken of as most excessive during

the passage of these bodies, and the usual symptoms of calculus will be very graphically given. They do not describe the frequent micturition as being associated with an increased discharge of urine. It is probable we sometimes see only a part of that which is evacuated, but we may generally judge that only a moderate quantity passes, inasmuch as the specific gravity of what we obtain is almost always sufficiently high. Whether these patients be hysterical or insane, or the subjects of hysterical insanity,—if that be the politer term,—it matters little; they are guilty of deliberate mendacity, in order to make others miserable; and there we will leave them, with the remark that these are pseudo cases of frequent micturition, which it is merely necessary to allude to, as part of the history of the subject. Frequent micturition is, however, an occasional concomitant of hysteria. It is not only young girls who may become the subjects of this symptom; it is to be observed in matured and married females, and yields to the ordinary remedies for hysteria in their case as in that of young and unmarried women. Now and then the frequent micturition is caused by the secretion of a large quantity of light urine, that symptom so well known to practitioners. At other times this may not persist. The urine may be nearly natural, but with the hysterical symptoms the bladder becomes irritable.

The true nature of these cases is chiefly to be determined by excluding other causes as productive of frequent micturition, and there is usually but little difficulty in doing this. The hysterical symptoms may not be very prominently shown, but if attention be directed to the point the truth appears plainly enough. A knowledge of previous history is very necessary in these hysterical cases. It happened to me to see a young lady about two years ago, in whom the symptoms of frequent micturition was supposed to depend upon hysteria, but in reality was caused by the presence of a mulberry calculus in the kidney. This may appear an unaccountable error. It was only through the history that we arrived at the truth, and significant as the indication was which her story revealed, still the hysterical condition had so completely distracted the mind from the point, and had been regarded by those who had seen her as so sufficient in itself to explain all, that even the important symptom of hæmaturia was alighted.

As this case is not an isolated one, I will briefly detail it. The patient was a young lady of fully developed figure and of healthy appearance. Her symptoms were principally those of hysteria. She had loin pain to some extent, but not more than we continually meet with in women. The urine was passed often, but nothing remarkable could be detected in it. The persistence of frequent micturition eventually led to close questioning as to the previous history of this young lady, and it was clearly ascertained that she had passed blood on several occasions some months before. I have since heard of a similar case, in which calculus

caused irritability of the bladder and slight hæmaturia, hysterical symptoms being present in a marked degree. I would not have it supposed that I am inclined to connect all hysteria with the presence of calculus in the kidney, but these two cases deserve notice, and will serve to warn practitioners against classing frequent micturition amongst purely hysterical symptoms without careful inquiry.

What we, however, see in urinary pathology and its therapeutics is so suggestive that I trust I shall not be regarded as trenching on the field of those who keep the ladies so much to themselves if I offer the results of experience, which is not easily accessible to those who, as obstetric practitioners, may not have made the chemistry of urine an especial study. The connexion existing between the nephritic and uterine branches of the sympathetic are most intimate, but while uterine irritation has been spoken and written of in every possible phase, and while scarce an organ or tissue of the body has escaped the criticism of uterine pathologists, the kidney has by no means received the amount of attention it deserves. I have already mentioned two cases in which calculus existed concurrently with hysterical symptoms, and many cases suggest themselves to my mind, which I am much inclined to believe would have gone far towards establishing the fact that the kidneys are often primarily involved in this affection.

My friend Dr. Lever lately gave me the notes of a case strongly bearing on this point, in which the hysterical symptoms were very severe. Death took place by coma, and post-mortem examination showed the kidneys advanced in disease. The poor girl died with all the symptoms of uræmia. Her blood, poisoned by admixture with urinous material, produced death precisely as it occurs in morbus Brightii.

The next cause productive of the disease under consideration often occurs in connexion with hysteria, but not necessarily so. It consists in the presence of hardened feces in the rectum. Sir Benjamin Brodie directed attention to the point many years since, and urged the propriety of examining the rectum in order to remove the indurated mass. Purgatives are unavailing, the feces requiring removal by an instrument. I was consulted in a case of this kind some three or four years ago, in which the cure was effected by mechanical means. The relief was immediate. There may be occasional diarrhoea, but the rectum contains hardened feces notwithstanding, and the motions find their way by the sides of the concrete mass.

Another cause for frequent micturition exists apparently in a state of skin brought about by the application of cold to the surface. I have seen this produced by an insufficiency of bed-clothing. The case puzzled me much at first. I have known the same result to follow from a married man taking it into his head to sleep alone, having previously slept in the same bed with his wife. Again, I have observed the result in persons exposed to the influence of our colder climate after residence

in the East. These cases occur in irritable constitutions, and the skin is generally delicate and thin, but otherwise the health may be perfect. It would appear here that the kidney takes on a vicarious action, owing to the spasm of the cutaneous secreting surface, and irritability of the bladder results as a consequence, an increased quantity of pale urine being passed.

Amongst causes for frequent micturition, we find diabetes enumerated, and it certainly may become a symptom of the disease. The quantity passed on each occasion is, however, so large compared with that characterizing most of the other states I have described, that the patient's attention is attracted by the large discharge, as well as by the frequent call, and the former is related as the more prominent symptom. This should lead at once to the examination of the urine for sugar, and if that be *not* found, we may perhaps determine the presence of insipid diabetes by the low specific gravity, the increased flow, great thirst, and other characteristic symptoms. It does, however, now and then happen in diabetes, that frequent call to pass urine has been the symptom most noticed by the patient, and then if due care be not taken, the practitioner is a long time led astray. Cases such as these by no means infrequently occur. They are sometimes treated as dependent on the gouty diathesis, an uric acid deposit having attracted the attention of the medical attendant. Treatment is then persevered in until all the more aggravated symptoms of diabetes appear. The early detection of this disease, which is so important for its relief, is thus prevented.

I now have to speak of two forms of cancerous affection which may produce frequent micturition—viz., malignant disease of the kidney and of the bladder. These two states are characterized by hæmaturia. It sometimes happens that the irritability of the bladder is so great when the kidney alone is involved, that this sympathetic affection may be mistaken for the primary disease, and the nephritic mischief entirely overlooked. What I would wish to enforce is, that these two symptoms, hæmaturia and frequent micturition, taken together, should be regarded (the prostate being excluded) as indicating calculus or malignant disease, and that either the kidney or the bladder may be in fault. The indications of cystitis, shown by the urine when calculus exists, have been already dwelt upon; but when malignant disease is present, there may be none of these. The urine may be clear, or may only contain such a small quantity of blood that very careful examination is requisite in order to detect it by the naked eye. Here the kidney might be considered in fault, and the diagnosis is not always to be made.

If we have a tumour of the abdomen over the region of the kidney, then we may safely diagnose that organ involved; but this indication is not always afforded us, and then we should examine the bladder very carefully. If, on sounding, hæmorrhage occur to an extent exceeding that

usually produced by exploration, there is most likely a growth on the mucous surface of the bladder.

Before leaving this part of my subject, I must say a word or two respecting the seat of tumour in these forms of disease. First, with regard to the kidney. It is necessary to guard against being led astray by the tumour appearing in a position somewhat removed from that in which it ordinarily exists. Nephritic enlargement sometimes occurs at the upper portion of a kidney, and in abcess of the organ especially, there is often considerable bulging upwards. This may occur to such an extent that the tumour eventually may be felt in that part of the abdomen usually occupied by the liver, and in malignant affections also, if the right kidney be involved, the tumour may exist over nearly the whole of the right hypochondriac region. An able paper will be found in the "Guy's Hospital Reports," in which Dr. Bright has given sketches illustrative of this fact.

As regards the production of frequent micturition by malignant disease of the bladder, the tumour must be situated near the neck of the organ in order to cause the symptom. I have had two cases within the last few years especially illustrative of this point. In the one, so little inconvenience was felt that had it not been for the microscopical indications of the urine, I should have inevitably mistaken the disease. There was no increased desire to pass urine, and no pain; and hæmaturia was only an occasional symptom. Post-mortem examination showed the advantage to be derived from microscopic research, the diagnosis being verified by the presence of a large mass of villous growth on the fundus of the bladder. The situation of the tumour, far removed from the neck of the organ, explained the absence of the symptom of frequent micturition. In the other case, a tumour of the same kind existed near the neck of the bladder, and the irritation was most torturing. The symptoms otherwise exactly resembled those of the former case. There was the same hæmorrhage after sounding, and hæmaturia was of very frequent occurrence. I have spoken of certain microscopical appearances which determined my diagnosis: these were merely such as I have detailed in former lectures, consisting in the presence of those corpuscles or cells which are found in the villous growths from mucous membranes, and which, when they can be satisfactorily determined to exist in the urine, are always most significant.

It has not yet fallen to my lot to demonstrate the presence of any peculiar structures when the kidney alone has been affected; but the subject is somewhat novel, and it is far too early to propose the discovery of such cells as a positive proof that the bladder, and not the kidney, must necessarily be the part involved in the disease.

Before leaving the analytical symptomatology of frequent micturition, I would speak of the influence of habit and of nervousness in continuing the symptom, even after the obvious causes pro-

ducing it are removed. With regard to habit, it is in some cases of the greatest importance to inform the patient of his position, and instruct him to restrain himself as much as possible. If he will do this, his malady becomes of necessity of shorter duration. We often find the subjects of this symptom acquainted with every corner suitable for the relief of their wants. They are reminded of their malady on approaching their wonted haunts. An effort is required to pass them, and it is well to instruct such patients to make a point of doing so if they possibly can. The nervous feeling which arises in sufferers from this infirmity when they find themselves in company is very distressing. They are certain to feel the inclination when there is the greatest difficulty in gratifying it. They consequently refuse to go into society. They are, perhaps, urged to do so; they suffer great misery, and their complaint becomes aggravated. This should never be allowed. Let them avoid company, and as their complaint improves they get more courage; and there is no fear of a return of this nervousness, except they again become the subjects of those physical ailments which originated the disease.

This closes the list of causes for frequent micturition which I have proposed to consider, and I shall next proceed to remark on the treatment advisable in some of the more important diseases giving rise to the symptom.

First, with respect to the inflammatory conditions—viz., cystitis, caused by calculus and by retained secretion, or arising after gonorrhœa. I would beg your indulgence while I proceed to premise the more practical part of my remarks by considering the anatomical conditions of the lining membrane of the bladder, and the peculiarity of its position when it becomes the subject of inflammation. In connexion with this subject it is important to reflect on the effects of disease as observed in the mucous membranes generally.

The mucous membrane lining the mouth, fauces, and œsophagus, and extending to the anus, is known to secrete a mucus in disease, varying in quantity and quality. Its physical and other characters are easily determined, for the reason that we have constant opportunity of separating it from admixture with the solids excreted from the canal. It is not necessarily macerated, nor more or less dissolved in the feces, nor is the character of the latter changed in such manner by the presence of mucus but that we can make due allowance for its presence, and separate in our minds the indications afforded by each. The other part of the gastro-pulmonary mucous membrane, descending into the respiratory canals, secretes, under irritation, a mucus which we can collect nearly at all times in a pure and unmixed state.

Now, neither of the above conditions apply to the urinary mucous membrane. The secretion from the mucous surface of the bladder, and from the whole of the urinary tubes, mixes with and alters the secretion of the kidney. The urine is

acted upon and changed by the various results of inflammation, which may be poured out by the membrane, and it is the effect produced on the urine by the fluids resulting from inflammation that it is important for us to remember.

There has been great carelessness shown on this point. The urine has been regarded as not very materially changed by the secretion of the mucous surfaces lining the passages, and the possible modification effected in its constitution during its passage from the kidney to the orifice of the urethra has received but little consideration. An acid and an alkaline state of urine, as evacuated from the urethra, have been too much regarded as indicative of the states of those urines as secreted by the kidney.

Whole pages have been devoted to the explanation of the alkalinity of urine and the cause sought for in presumed states of the general system, while there is little doubt that the kidney has been all the while secreting a strongly acid fluid, which has subsequently become alkaline owing to admixture with the secretion of the inflamed mucous surface. For many years there has been a great horror of alkaline urine, because it is so often connected with advanced disease of the urinary organs; and this fear even extends to the rejection of remedies capable of inducing alkalinity. We hear it said, "We must take care not to make the urine alkaline; if we do we shall cause phosphatic disease." Now I defy any one to succeed in doing this. He may administer alkalies for months, and he shall not necessarily cause a deposit of the earthy phosphates. The urine may remain alkaline during all that time, but the effect so described will not take place. All he will do will be to cause the excretion of an urine depositing earthy phosphates *on boiling* (a necessary result of rendering urine even slightly alkaline), but the earthy salts remain dissolved unless a boiling temperature be applied, and they will not be present in more than natural proportion.

Having taken the opportunity in former lectures of bringing these views before the notice of the profession, I shall not now make any extended notice of the subject further than to refer my readers to the facts and arguments adduced in support of the power possessed by the mucous membrane of the bladder, when inflamed, to neutralize and render alkaline the urine which has been secreted of its full degree of acidity.

The fact that by alkaline treatment we can often succeed in obtaining an acid urine from the urethra when it has previously been of alkaline reaction, is in itself almost a positive proof that the mucous membrane has produced the alkalinity of disease, the fact being utterly inexplicable on any other theory. Alkalies administered in small doses, so that the acidity of the urine, as secreted by the kidney, is only partially destroyed, will, as the mucous membrane becomes less inflamed, eventually cause a faintly acid urine to pass from the urethra; and when the remedy is withdrawn, the urine may be observed of its natural acidity

This, too, happens in cases where acid remedies have entirely failed to afford relief.

After these observations, it will not be matter for surprise that I should speak strongly in favour of alkaline remedies in all cases of inflamed bladder. And, first, let us consider what benefit we may hope to obtain from their use when cystitis is dependent on the presence of calculus. In this form of disease, the mucous membrane being subjected to mechanical irritation, we cannot hope to do much for our patient by medicines. The removal of a calculus, however, may be performed at a favourable or at an unfavourable time; and therapeutics are in this way of much service. The bladder is so circumstanced that its inflamed mucous membrane is constantly pouring out large quantities of secretion, in order to protect it from injury. This irritation once set up by the calculus, is aggravated by the presence of normally acid urine; and so long as the secretion of the kidney possesses an acid reaction, so long will the evil be aggravated. It might be imagined that because the urine is naturally acid the mucous membrane ought to find acidity more genial than alkalinity. This is, doubtless, true in health, but if inflammation occur, the case is different; and I would mention, in illustration of this, the familiar instance of gonorrhœa—a disease in which it is well known the mucous membrane being inflamed, great relief is obtained by rendering the urine alkaline. The alkaline treatment is, then, advisable in all inflamed states of the urinary mucous surfaces; and the dread of inducing the phosphatic diathesis is a mere bugbear which, in my belief, by interfering with correct therapeutics, has cruelly added to the sufferings of humanity.

In my lectures of last year, I described the plan I adopt in order to render the urine alkaline, as secreted by the kidney—viz., the administration of the neutral salts of vegetable acids. These enter the urine very rapidly as supercarbonates, and according as the bowels require to be acted on or not, I administer the more or less purgative forms of such salts. The citrate of potash answers remarkably well merely to produce an alkaline urine, and the tartrate may be added in due proportion two or three times during the day, should it be necessary to relieve constipation. This plan, with the addition of anodynes at night, is all we can well do in cases of calculus, and the bladder will sometimes be so relieved by it, that patients may lose most of their symptoms, while those remaining will be greatly mitigated.

There is a point connected with the administration of these neutral salts well worthy of attention. The decomposition occurring after they enter the stomach being productive of a supercarbonate of the alkaline base in the urine, we produce a fluid in the bladder possessing peculiar chemical qualities. Thus while, on the one hand, uric acid is soluble in such a menstruum, we also know that the earthy phosphates will dissolve in it—a double property long sought for by those who would effect the solution of calculi in the bladder.

I do not put this forward as the discovery of a

means of effecting the solution of vesical calculi; but it is impossible to shut one's eyes to the fact, that an urine kept constantly under such chemical conditions must inevitably be exercising a solvent action, both on the uric and phosphatic ingredients of calculi, every minute of the day. The plan, moreover, is one which renders the urine soothing to the mucous membrane, and this is an important indication to answer. I would entreat my surgical brethren who are so constantly treating calculous cases, to use the alkaline citrates freely. It is to them we must look for results as to the efficacy of the remedy in exerting this solvent action on urinary concretions. Of the great value of the plan, after the operation of crushing, I am perfectly satisfied.

I shall not enter on a consideration of the methods which have been proposed at different times to disintegrate calculi while in the bladder by electrical decomposition. These propositions have for the most part originated with physicians. The late learned President of this College was the first to make allusion to the possibility of this being affected. Since he wrote others have taken up the subject. Thus we find, in Dr. Pereira's "*Materia Medica*,"* the following statement:—"Bonnet suggested that the bladder should be injected with a solution of nitrate of potash, and the calculus subjected to the action of electricity in this liquid, in order that the nitrate may be decomposed into nitric acid and potash; the former of which, it was suggested, would dissolve the phosphates, while the latter would dissolve the uric acid and urate of ammonia."

The above view has since been taken by Dr. Bence Jones, and will be found in a paper lately published in the "*Royal Transactions*." For my own part, though it may seem presumptuous to fix the limit beyond which human ingenuity is not to stop, yet there appears so much which is opposed to the possibility of success when contemplating such proposals, that I have no hope whatever of their adoption leading to the desired result.

As regards the treatment of cystitis following gonorrhœa, I have nothing more to say than that the alkaline plan exceeds all others in efficacy. The combination of hyoscyamus with citrate of potash, in half-drachm or scruple doses, repeated every four hours, will generally produce relief. The dose of hyoscyamus must be moderately small, as it is to be so frequently repeated, but twenty minims of the tincture will not be found too much. If inflammation run high, this plan must be combined with the abstraction of blood by leeches or cupping.

The treatment of cystitis, as produced by partial paralysis, depends much upon surgical aid. The bladder should be emptied by the catheter, and the *whole* of the urine being thus drawn off, the operation may be in like manner again repeated after a few hours. The viscus, thus freed from the presence of an irritating fluid, often re-

covers its natural condition; but while this is doing we always improve the condition of the inflamed mucuous membranes, by keeping the secreted urine alkaline, and the citrate of potash may be advantageously administered at intervals. Much has been said of the benefit derived from strychnia and the various preparations of nuxvomica, in assisting the paralysed bladder to recover itself. Inasmuch as strychnia is an excellent tonic, it may sometimes do good in judicious hands; but I am not much inclined to believe in its possessing that power over the bladder of which some have spoken so highly.

With respect to the second class of causes productive of frequent micturition, many of them consist, as I have already shown, in the presence of diseases bearing a very general relation to therapeutics. Thus diabetes insipidus and mellitus, and albuminuria frequently cause the symptom. Of these diseases I need only remark, that the remedies best suited to their relief are those which will most benefit the bladder, by lessening the discharge of urine, on the one hand, and, on the other, decreasing the proportion of albumen contained in it. The other causes described, consisting in the presence of hardened feces in the rectum, and inertness of skin from exposure to cold, need no remark, the treatment being sufficiently obvious. I would say a few words, however, as to the management of calculus in the kidney, when it is keeping up sympathetic bladder irritation. When we have a patient in this plight, we hope for the passage of the calculus as the most desirable termination of the case, and our treatment should therefore apply to the fulfilment of that end. How is this to be effected? Our object must be more especially to lessen spasm, and to prevent the concretion increasing in size. Alkaline treatment is here most valuable. The citrate and tartrate of potash or soda, exhibited at intervals during the day, are not only theoretically indicated as neutralisers of the urine, the acidity of which must irritate the inflamed renal structure, but the action of these remedies, in producing a supercarbonate of the alkali in the urine, is just what we require in order to dissolve the uric acid or phosphatic earthy deposit, and to prevent its increase. I have now been in the habit of recommending this treatment for some few years, and, where it has been carefully carried out, have been much gratified with the result. In several cases it has appeared to facilitate the expulsion of the concretion; and in one or two instances, where the urine has been carefully watched, there has been no return of the disease.

In inveterate uric diathesis, where calculi are constantly forming, this plan of treatment may not always gain credit. The calculi already formed may come down as before, and it may not be easy to impress our patients with the soundness of our views when they observe as many calculi as ever entering their urinary canals. The benefit has, however, been to me sufficiently obvious, and I am convinced that it is the only true mode of combating the calculous tendency.

When speaking of calculus in the bladder, I alluded to the chemical effects produced by the alkaline supercarbonates, and I may here relate the manner in which any one can assure himself, without difficulty, of the power they possess of effecting the solution of earthy phosphates. I need say nothing of their action on uric acid.

If we take recently precipitated earthy phosphate, and wash it, and then pour upon it a solution of bicarbonate of soda, allowing digestion to go on in the cold, with occasional shaking, we find that the bicarbonate will dissolve a very notable quantity of the phosphate. This may be shown by boiling the filtered solution, when the earthy salt will fall as a precipitate.

I have next to notice the treatment of hysterical subjects complaining of frequent micturition. Of the pseudo-cases described, little need be said. They require moral management, and some diversity of opinion may exist as to the best course to pursue. Were I to advise, I should say, when you have satisfied yourself that they are deceiving you, tell them privately that they are doing so, and advise them to get out of the scrape by gradually acknowledging themselves cured by remedies which you propose to administer. In this way they are saved from exposure, and by thus compounding with their mendacity, they may be induced to give up such practices for the future. Of course, when this plan is adopted, it is right some responsible member of the family should be made privy to the scheme and the rationale of its action.

If hysteria be really complicated with irritable bladder, we have the means of doing much good. When describing this state, I alluded to the fact that it was not necessary a large flow of urine should occur, in order to produce the symptom of frequent micturition. It would appear that in some cases the skin refuses to act altogether, and nearly the whole of the water discharged from the system has to find its way through the kidney. This may be owing to the feeble and irregular state of the circulation observed in hysteria, and here the irritability may be removed by tonics and stimulants; and when the skin begins to act, as a result of the restoration of action to the extreme vessels, the symptom ceases.

In other cases less aggravated, it would appear that though the skin maintains the power of excreting water, it loses that amount of energy necessary to render it an emunctory of the more solid constituents of the blood. In this way, the excretion of extractive and other matters is thrown more fully on the kidney, and the urine is apt to become abnormally acid. Here we have an important indication to fulfil, and it becomes necessary, while we administer tonics, that we should render the urine of an unirritating character. The use of the citrate or tartrate of potash or soda will here also do all we require, and they may be advantageously administered in combination with antispasmodics. Of these, assafoetida is perhaps the best. It is a disagreeable remedy, it is true, but great benefit accrues from its administration.

The cutaneous surface, as we well know, is rendered active during its ingestion, the perspiration possessing the odour of the drug in a marked degree. The kidney, under this treatment, has less acid to excrete, and the irritability of the mucous surfaces is thus lessened. The best form for this unpalatable drug is in pill, and five grains may be given three times a day with each dose of the saline remedy.

Original Papers.

ON A CASE OF EXCISION OF THE HEAD OF THE FEMUR AND FLOOR OF THE ACETABULUM FOR CARIES COMBINED WITH PELVIC ABSCESS.

By HENRY HANCOCK, Esq., F.R.C.S.,
SURGEON TO CHARING-CROSS HOSPITAL.

EXCISION of the head of the femur has been performed for gun-shot wounds and other injuries of the part, and also for caries; but the case which I have now the pleasure of submitting for the consideration of the profession is the first in which the operation has been undertaken with the avowed object of excising the head of the femur and floor of the acetabulum, and relieving pelvic abscess.

The operation of excision of the head of the femur in cases of injury does not appear to have excited any difference of opinion as to the propriety of its performance. Not so, however, for caries, where the same unanimity by no means obtains, some surgeons condemning the proceeding altogether; others, whilst advocating and performing the operation, restricting its employment to a certain class of cases, to the exclusion of others, in which it appears to me to offer equal, if not superior, advantages.

Mr. Syme, in the year 1849, published the following observations:—"Some operations have lately been performed in London, with the view of remedying caries of the hip-joint by cutting out the head of the bone; but this proceeding must have originated and been conducted in forgetfulness of the well-established pathological fact, that when caries attacks the surface of the joint it is never limited to one of the bones which compose the articulation. If the articulating surface of the head of the thigh-bone be carious, it follows as a matter of absolute certainty that the acetabulum must be in a similar condition. But as the acetabulum does not admit of removal in the living body with any prospect of safety or advantage, no benefit can be derived from taking away a part of the articulation; and therefore excision of the head of the thigh-bone for caries of the joint should be regarded as no less erroneous in theory than objectionable in practice."..... "But even in the event of recovery being ever really accomplished, the satisfaction afforded by it must always have the painful drawback of conviction, that as only half of the joint was removed there could not have been caries present, or consequently

any warrant for operative interference."* Mr. Skey also remarks—"This operation is rarely justifiable, or, when performed, answers any good purpose."† Mr. Skey, however, has, since publishing the above, performed the operation, but with what result has not appeared.

On the other hand, the operation is advocated by Messrs. White, Fergusson, Knox, Smith, Walton, Dr. Bonino, and others; but most of these gentlemen restrict its performance to those cases in which dislocation of the head of the femur has obtained, the head of the bone creating irritation by acting as a foreign substance amongst the soft tissues of the hip, and all lay considerable stress upon the necessity that, for the operation to succeed, the amount of disease in the acetabulum and pelvic bones must be extremely small. For instance, in the year 1844, Dr. Bonino writes—"Any operation undertaken when this part (the cotyloid cavity) is affected is worse than useless, as we only remove part of the disease, leaving behind perhaps the portion most likely to lead to a fatal result. Such, indeed, appears to have been the cause of death in some of those operated upon."‡ Mr. Fergusson, in his paper read before the Medico-Chirurgical Society in 1845, alluding to a case operated upon by Sir B. Brodie, observes—"In Sir B. Brodie's (case), the head of the bone was in the acetabulum at the time of operation. This patient died within a few days after, apparently the direct effect of that proceeding."§ And again, in a Clinical Lecture delivered in March 1848,|| noticing the ease with which the acetabulum may be reached, he says—"I do not by this imply that I should not be deterred from operating had I indubitable proof that the bones of the pelvis were affected; on the contrary, I would hesitate to resort to such a proceeding under the circumstances."

In the year 1848, Mr. Henry Smith laid down the following rules:—

"If, then, there be dislocation of the thigh-bone, and the head of that bone be found to be extensively diseased, and there is no disease of importance in the pelvic bones, and no communication between the abscesses about the hip nor any with the pelvis or abdomen, &c., then will it be both justifiable and proper to have recourse to this operation.".... "It is only under particular circumstances that resection of the head of the femur should be attempted. The disease in the hip must be in its last stage; it is necessary that dislocation of the thigh-bone from its socket should have taken place; and there must be evidence of the disease being confined chiefly to the upper part of this bone, and of a non-complication to any great extent of the pelvic bones."¶

In 1849, in his rejoinder** to Mr. Syme's stric-

* THE LANCET, 1849.

† Operative Surgery, 1850, p. 308.

‡ Northern Journal of Medicine, p. 373.

§ Medico-Chirurgical Transactions, vol. xxviii. p. 537.

|| Medical Times, vol. xix. p. 447.

¶ Ranking, vol. viii., pp. 160. 161.

** THE LANCET, 1849.

tures on the operation, he repeats these views, in which Messrs. Coulson, Haynes Walton, Gay, and others, concur.

Sir B. Brodie, in 1850, after pointing out that in old cases of hip disease, the head of the femur may sometimes be felt lying on the dorsum ilii, seemingly almost immediately beneath the common integuments, remarks: "In such a case it has been proposed to make an incision on it, and remove the head and neck of the femur by a saw. It would appear that this operation has been actually performed with some degree of advantage, and I do not doubt that circumstances may occur to make it worth while to have recourse to it. But it is to be observed at the same time that all that can be thus accomplished is the removal of one portion of the disease, and that it is the largest portion of it, in the bone of the pelvis, which is necessarily allowed to remain. The operation cannot be performed without a certain degree of local disturbance, and more or less loss of blood; and, taking all these things into consideration, I conceive that we should not recommend it except where some unequivocal advantage may be expected from it.*" Whilst Dr. Knox, in the year 1851, writes as follows:—"In making this seemingly bold attempt for the speedy cure of a hitherto intractable disease, surgeons were no doubt quite aware, or at least ought to have known, that the caries affecting the femur was most usually a morbid affection not confined to this bone, but was a disease affecting simultaneously, in many cases, the pelvic bones entering into the composition of the joint; that the os innominatum, in fact, was quite as liable to constitutional or scrofulous caries as the femur itself; that both are, unhappily, most frequently simultaneously affected; and that the removal of the femoral portion of the disease (the pelvic part being beyond the reach of excision at least, if not of any surgical treatment) by no means warranted the inference that disease in the pelvic portion would in all cases be arrested, and a speedy cure be effected."† Whilst, as recently as Nov. 1856, Mr. Syme reiterates his objections, characterizing the operation as "bloody and formidable; not only useless, but hurtful."

I have thus traced down the opinions of those gentlemen who have directed their attention to the operation for the excision of the head of the femur, since its resuscitation in 1844 down to the present time; from which we learn that, whilst some condemn the operation altogether, others assert that it should only be performed—first, in the last stage of hip disease; secondly, when the head of the bone is dislocated; thirdly, when the cotyloid cavity is free from disease; fourthly, when the amount of pelvic disease is but trivial. Whilst Dr. Knox, whose celebrity as an anatomist gives weight to his opinion, asserts "that the pelvic portion of the hip-joint is beyond the reach of excision."

Other objections have also been raised—namely,

the possibility of mistaking disease of the sacro iliac synchondrosis, or of the pelvis itself, for hip-joint disease; and another, to which Mr. Coulson attached great importance, "that in this disease it is not the articular symptoms which generally produce death, but the exhaustion of the frame and strength, which the surgeon looking to the local cause only imagines to arise from a resistance to an incurable local malady, whereas the local malady and hectic are but symptoms indicative of the same disease; so that, to whatever extent the local malady may aggravate the general symptoms, as it is not the cause of these symptoms, so neither will its removal prove the remedy.*"

I will not here enter upon the diagnosis between these several affections, but whilst I agree with Mr. Coulson that it is the exhaustion of the frame and strength, which for the most part destroys the patient, I cannot by any means admit his conclusion that this exhaustion of the frame and strength is so entirely independent of the local mischief that the removal of the latter will not prove the remedy. This assertion must have been made on the assumption that all cases of hip-disease depend upon scrofula, but the various reports teach us that they frequently arise from accident. Even in scrofulous disease of the hip-joint, we should draw a distinction between the general constitutional symptoms of disease and the general constitutional irritation induced by the local condition of parts, and which it is not too much to say in many instances produces that exhaustion of frame and strength which destroys the patient. Watch a patient with this disease: it may exist for many months without hectic or constitutional disturbance of any kind. Watch the same patient during the progress of ulceration, suppuration, the destruction of the ligamentum teres, and dislocation; then the hectic and constitutional irritation are at their height. Watch the same patient again when dislocation has obtained; then the disease appears to have exhausted its rage, the constitutional irritation subsides, the abscesses frequently heal up, and a cure takes place. But in more unfavourable cases there does not appear sufficient power to throw off the disease. The bone is broken up, rough, and carious, sinuses form, and continue to discharge, hectic fever, night-sweats, emaciation, loss of appetite, restlessness, cough, in some instances spitting blood, ensue, the lungs become affected, and the patient dies.

There is another element of destruction in these cases, which does not appear to have been taken into account. I allude to the wear and tear from extreme discomfort and suffering arising from the distortion induced by the local mischief,—where the slightest touch or movement causes excessive agony; where the distorted and contrained position deprives the patient of all natural rest; where the natural evacuations are attended with such suffering as to render them a constant source of dread;

* On the Joints, fifth edition, p. 141. 1850.

† Med. Times, June, 1851.

* Ibid, vol. xxii. p. 664.

where the patient lies for days and nights together, clasping his affected thigh above the knee, in the vain endeavour to alleviate his sufferings.

It is a very strong argument against Mr. Coulson's position, that the constitutional symptoms which follow the operation for the removal of the head of the femur are extremely slight; that the hectic, loss of appetite, and night-sweats, when pre-existing, speedily subside; that the patient is immediately freed from his constrained and distorted position, which freedom, in my case, afforded the greatest comfort. But the strongest argument is found in the fact, that of twenty-six cases operated upon in this country, six died within three months; in three, one lived two years, one six months, and one four; of two the result is not known; whilst fifteen have resulted in perfect cure, giving a pretty convincing proof that in some instances at least the removal of the local mischief is the remedy for the general disease.

Before I enter upon the relation of my case, permit me to offer a few observations to the consideration of the profession upon the regulations to which it is said the operation for the removal of the head of the thigh-bone should be restricted. They are principally, as we have seen, four in number:—

1st. That it should only be performed in the last stage of hip-disease.

2nd. When the head of the bone is dislocated.

3rd. When the cotyloid cavity is free from disease.

4th. When the amount of pelvic disease is but trivial.

With regard to the first regulation, I would inquire whether by the term "last stage of hip-disease" is meant the last stage of the patient's power of endurance—the last extremity of constitutional disturbance, when we are convinced that he must sink if that disturbance be allowed to persist? or, is it meant to express the last stage of disease in a pathological sense? In deciding upon this operation, we should be guided solely by the condition of the patient, and not by any arbitrary stages of disease; and whilst I always have, and still continue, to deprecate unnecessary and ill-considered operations, I believe it to be our duty—when we have assured ourselves that a case is one of hip-disease, that the patient is dying, that there is no hope of saving him by the ordinary means—to perform, or, at all events, propose the operation without reference to whether, pathologically speaking, the disease be in this or that stage, or whether the head of the bone be dislocated, the acetabulum healthy or not.

I have long since made up my mind, should I ever meet with a case such as described by Sir B. Brodie, at page 65 of the third edition of his work on "Diseases of the Joints," wherein death, preceded by delirium, ensued within a week of a wrench of the hip-joint, which, after death, was found to contain about half an ounce of dark-coloured pus, that I would give the patient the benefit of the operation, if permitted to do so. Through the kindness of an old friend, I some

years ago had the opportunity of examining a recent specimen of a similar case. The patient, who was comatose for two days before death, did not survive a twist of the hip more than a week. There was a longitudinal rent, about an inch long, in the synovial membrane, where it was reflected from the upper part of the acetabulum, over the neck of the femur; whilst the joint contained rather more than a tablespoonful of fœtid matter and blood; and I was then, as I now am, strongly impressed with the conviction, that if at this stage of delirium, or coma, the head of the femur were disarticulated, and the fœtid matter allowed to escape, the patient might be saved from impending destruction.

It will be gathered from these remarks, that I do not attach any importance to the second regulation, "that the head of the femur must have been dislocated." It is doubtful whether dislocation takes place so commonly in these cases as might be inferred from this regulation; but, be this as it may, it is a curious fact, that of those who support this doctrine, Mr. Coulson alone assigns a reason for arriving at such conclusion. He says, "The first condition is the absolute displacement of the head of the bone; for as long as the neck and the trochanter are in relation to the acetabulum, there is a chance of ankylosis taking place, which is the most favourable termination to be looked for."* This is scarcely a tenable position, as it has never been proposed to operate whilst a chance of cure by other means remains; and, moreover, we know that though, in some cases, the entire head and neck of the femur may be destroyed by caries, in others the head of the bone is comparatively sound; the caries more especially attacking the acetabulum; that caries and ankylosis may coexist in the same joint, and the patient sink, worn out, before the latter is perfected, notwithstanding the head or neck of the femur has remained in relation with the acetabulum.

In my case the operation, according to these regulations, ought never to have been undertaken. The head of the bone remained *in situ*; the acetabulum was extensively diseased and perforated, and there was pelvic abscess. The patient was at the last ebb of exhaustion; but the result has been so satisfactory that it may reasonably be questioned whether the third and fourth regulations—"that the cotyloid cavity must be free from disease, and the amount of pelvic disease but trivial,"—can any longer be maintained.

They appear to me to be open to very serious objection; indeed, if rigidly adhered to, they would have prevented many of the operations the success of which we have so much reason to admire. Whatever exceptions may have been taken to the doctrine, we cannot doubt that, as a general rule, Mr. Syme is justified in maintaining that, when caries attacks a joint, it is not limited to one bone. Many of the cases operated upon support this opinion. In 18 out of the 26 opera-

* Medical Times, vol. xxii., p. 664.

tions performed in this country, including my own, the acetabulum afforded more or less evidence of departure from its natural and healthy condition. At the time of operation—

In 2, there was scarcely a trace of acetabulum.

" 3, the acetabulum was found filled with a fibro-gelatinous mass.

" 6, the gouge was employed for caries.

" 1, the acetabulum was said to be enlarged by absorption.

" 1, the acetabulum is described as being deprived of cartilage.

" 1, it was perforated.

" 1, it was partly obliterated.

" 1, the patient died two years afterwards, with sinus above Poupart's ligament, copious discharge, pelvic caries, and perforated acetabulum. And

" 1, the patient died three months after the operation from profuse suppuration, which was found to extend into the pelvis through an opening in the cotyloid cavity.

I cannot, however, admit that either Mr. Syme's observations or these facts afford any reasonable arguments against the performance of the operation. On the contrary, they prove the fallacy of the doctrines enunciated, and they prove also that, as in the majority of cases the cotyloid cavity is more or less implicated, the surgeon should not undertake the operation with the expectation of finding the acetabulum healthy, and of confining his procedure to the removal of the head and neck of the femur, but with the full conviction that the acetabulum is in all probability involved, and the determination to remove the whole of the disease, which, in the majority of cases, may be done without much difficulty.

After all, it is only in a very few instances that the surgeon can tell beforehand what is the condition of the cotyloid cavity; but supposing he can do so—that a patient presents whose case imperatively calls for operation in all respects but that the acetabulum is extensively diseased, are we to abandon this patient to his fate, and allow him to die in agony? Is it not rather an additional reason for performing the operation? since the greater the amount of disease the smaller the chance of recovery, whilst the value of an operation does not consist in the facility of its execution, but in the urgency of the symptoms and the extent of disease and suffering it is capable of removing. It is very true that in many instances the bones of the pelvis appear to possess a wonderful power of reparation. The cases operated upon show this; but if we look through the list, we find 3 in which the patients died sooner or later from profuse suppuration, and wherein the acetabula were found perforated after death. It would seem therefore much the safer proceeding entirely to remove the doubtful portion of the acetabulum than to leave it behind or merely scrape it with a gouge.

Mr. Coulson and Mr. Henry Smith have laid considerable stress upon perforation of the acetabulum as an insuperable barrier to the operation,

but if I am able to prove that, so far from being so, the operation may be performed, even under these apparently unpromising circumstances, with safety and benefit, it will, I am sure, be agreed, that its application to such cases eminently enhances its value, since it affords a prospect of cure to an amount of disease hitherto considered irremediable. Presuming always that the disease is confined to these limits, that the viscera and spine are healthy and the lungs free from tubercles, I do not understand why a pelvic abscess, depending upon hip disease or caries of the pelvis, should not be cured as well as any other abscess connected with caries elsewhere, provided it can be reduced to the same condition. The amount of caries is often comparatively small, and though capable of causing excessive discharge, is confined to the limits of the acetabulum, and the part perforated.

In pelvic abscess depending upon hip disease, the head of the bone, or what remains of it, is often retained in the acetabulum after perforation of the latter has obtained; the matter thus escaping from the joint, the same lull in the constitutional symptoms takes place as is so frequently observed in spontaneous dislocation. Such abscesses are not cured, because the matter, if left to itself, cannot find a depending exit, and the cause, or caries, is allowed to remain. I cannot understand how so celebrated an anatomist as Dr. Knox could have asserted that the pelvic portion of the hip-joint is beyond the reach of excision. In cases requiring it, the pelvis may be reached at almost any point. Mr. Syme has recently removed necrosed bone from the tuber ischii, and in another case, from the ascending ramus of the ischium and inner margin of the pubic arch. The ilium is separated from the peritoneum and fascia by the iliacus internus. The ilium, ischium, and pubis, opposite the joint and beyond, are separated from the abdominal and pelvic cavities and viscera by pelvic and obturator fasciæ, the obturator internus, and levator ani muscles. The matter in pelvic abscess is outside the obturator fasciæ, between it and the bone separating the former from the latter, and causing a considerable interval between the two, so that the whole of the cotyloid portion of the pelvis, and for some distance beyond, may be removed without any risk of injury to the pelvic contents. But it may be asked why the spontaneous openings of a pelvic abscess cannot effect a cure equally with one made through the acetabulum? We find the answer in the shape of the pelvis, for when a patient lies on his side, the cotyloid portion is the most depending, so that when a free opening is made in that situation, and the patient is turned over on that side, not only does the matter find a free and depending exit, but the contents of the pelvis, gravitating upon the abscess, tend to consolidate the parts, obliterate the cavity, and assist the cure. I need scarcely observe that before undertaking these operations, we should make a very careful examination of the

patient, and as far as possible convince ourselves of the non-existence of disease elsewhere. We must assure ourselves that the pelvic abscess has been preceded by hip-disease; is connected with it, and not with disease of the spine, with psoas, or iliac abscess. One point of diagnosis, therefore, in these cases, is the pre-existence of hip-disease. Another is the locality at which the spontaneous openings usually occur. When the matter is poured into the pelvis through the perforation of the acetabulum, it falls, as we have seen, between the obturator fascia and the bone, and in consequence of the firm attachment of the former to the falciform margin of the great sacro-sciatic ligament, the matter cannot reach the skin in that direction, but gravitating posteriorly by the rectum, it presents by the side of the anus, simulating fistula. It occasionally bursts into the rectum itself or the vagina, and it has been known by its pressure upon the neck of the bladder, to interfere greatly with the process of micturition; but the more frequent locality, as far as my experience serves me, is in the outer part of the groin, near the anterior inferior spinous process of the ilium, probably induced by the position maintained by the patient at this stage of the disease. This is a point upon which I am induced to attach some importance, as affording a means of diagnosis between pelvic and psoas abscess, as the latter is usually present more internally, nearer the middle of the groin. The existence of openings externally in the neighbourhood of the joint will also assist, as pelvic abscess depending upon hip disease very rarely, if ever, takes place without having been preceded by suppuration about the joint itself.

When the opening occurs in the groin, the existence or non-existence of perforation of the acetabulum may be ascertained by a probe slightly curved; by introducing it into the opening, and directing its point downwards and outwards, it may be passed through the perforation into the joint; and I have also observed, that whereas in psoas abscess the probe can be more readily passed backwards and upwards, in these cases it takes the opposite direction—downwards and backwards.

In some cases of hip-disease, an abscess forms in the pelvis before actual perforation of the acetabulum occurs, though, in all probability, depending on the disease going on in that cavity. In such cases, should the connexion be clearly made out, and circumstances warrant operative interference, the floor of the acetabulum may be readily perforated by a trephine, and any amount of the acetabulum removed by a metacarpal saw. So, likewise, in those cases in which there is neither pelvic abscess nor perforation, but extensive disease of the acetabulum, I cannot see the objection to the operation. Here we have a patient actually dying; we know that an operation holds out the only chance. The whole of the acetabulum, even in a healthy condition, may be removed without penetrating the cavity of the pelvis, or injury to the parts contained; the whole of the operation

is external to the obturator fascia, consequently to the levator ani muscle, and, so far, extra pelvis. And if it can be done thus easily when the parts are healthy, it can be done with still greater facility when the acetabulum is much diseased, and when, in all probability, the internal periosteum and obturator fascia will be detached from the bone.

I will not detain the reader by any further remarks, but will now submit my case to his consideration, merely expressing the hope that the success which has hitherto attended it may induce others to adopt the principles I have here advocated, and which, I trust, by extending its sphere of application, may render the operation for excision of the head of the thigh bone, and of the diseased acetabulum, worthy of a prominent position in the annals of operative surgery.

Timothy D—, aged fourteen, admitted under my care, into Charing-cross Hospital, in July, 1856, with disease of the hip-joint. Five years before, observing a swelling in the groin, he attended at the Middlesex Hospital, but got worse, and was made an in-patient. He remained there five months. Two years afterwards, abscesses formed around the joint; and, eighteen months ago, he first came under my care at Charing-cross Hospital, where he remained three months, when he left apparently cured. He continued able to walk for ten months, when he was attacked with severe pain in the knee, which increased so much, that upon his application I again admitted him into the hospital. Shortly afterwards, abscesses formed around the hip joint, opening behind the trochanter, and also low down on the back of the thigh; and, subsequently, an abscess burst in the groin; and a probe introduced into this opening passed readily into the pelvis. He, in the course of time, became so emaciated and worn out with the profuse discharge, night sweats, loss of appetite, &c., that it was evident he could not long survive if something were not done for him. Great prostration and cough supervened, and his sputa became streaked with blood. I, therefore, requested Dr. Willshire to examine his lungs. He did so, and pronounced them free from any cause contraindicating an operation. Having as far as possible ascertained that the disease was confined to the hip-joint and pelvis, I examined the inside of the latter with a probe through the opening in the groin, and then discovered perforation of the acetabulum. Under these circumstances, I concluded that the pelvic abscess, and the boy's condition generally, were due to hip-disease, and that by removing the head of the femur, and the floor of the acetabulum, I might not only get rid of the diseased bone, but also, by affording a free and depending opening for the discharge of the matter, the pelvic abscess might be approximated to the condition of an ordinary abscess, and thus the patient be saved; and I accordingly proposed to my colleagues to remove the head of the femur and floor of the acetabulum, and so much around it as the extent of the disease required, the patient having agreed to undergo whatever I might advise. On the 6th of December, 1856, the patient

having been submitted to the influence of chloroform, and placed upon his left side on the table, I, assisted by Mr. Canton, Mr. Hird, and Mr. Barwell, commenced the operation by making a crucial incision over the great trochanter of the femur, extending about three inches beyond in all directions. The flaps having been reflected, a circular incision was carried round the head of the bone, which remained in its cavity, cutting through the glutæi, the muscles inserted into the digital fossa, the pectineus, &c., and opening the capsular ligament. Upon examination by the finger, the neck of the femur was discovered to be so much involved in the disease that I decided upon cutting through the bone immediately below the great trochanter; after which, the head of the bone was removed without difficulty. When this was done, the acetabulum was found to communicate by two openings at its deepest part with the pelvic abscess. I endeavoured to excise the floor of the acetabulum with the bone-nippers, but could not, and therefore with a metacarpal saw I cut round the acetabulum, removing the whole of the diseased bone, exposing the thickened pelvic fascia, and leaving a large opening for the escape of the matter from the pelvic abscess. It has been stated in another journal that I gouged away the several portions of acetabulum. This is an error; I did not use that instrument at all. The flaps were then brought together, and united by sutures, except opposite and below the opening in the acetabulum where they were kept separated by lint. A splint, extending from the armpit to the foot, was next applied, as the leg could now be straightened without difficulty, and the patient returned to his bed. Very little blood was lost during the operation, and no vessels required tying.

The operation was followed by almost instant relief of his constitutional symptoms. He was a little sick for the first forty-eight hours from the chloroform, but otherwise his course has been one of uninterrupted improvement. His countenance soon became cheerful and free from anxiety; his night-sweats ceased in two days from the operation. On the third day, the wound in the groin was entirely healed. The discharge from the wound made at the operation, which for the first few days was very abundant, gradually became thicker and diminished in quantity until the present time, when it does not amount to a teaspoonful during the twenty-four hours. He was able to sit up in bed for the first time for nearly a year with his knee straight fourteen days after the operation. In three weeks, he dressed himself, and sat in a chair by the fire. In five weeks, he was able to walk with a crutch and a stick; at the end of eight weeks, however, he imprudently dispensed with both crutch and stick; inflammation ensued, followed by abscess external to the pelvis. This, however, has subsided, and he is now progressing steadily, gaining flesh and strength, at the present time being able to walk in the park daily.

Harley-street, Cavendish-square, 1867.

ON THE RELATIVE TEMPERATURE OF ARTERIAL AND VENOUS BLOOD.

By W. S. SAVORY, M.B. LOND.,

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THIS great question may appear at first sight to be a simple one, but an examination of its history will certainly lead to a very different conclusion. The nature of the inquiry is to some extent revealed by the contrary answers given by those who have investigated the subject. While some have decided that arterial blood is the warmer of the two, others are in favour of venous blood; and, again, others have asserted that no difference exists, and that the temperatures of the two are equal. Now, whence this discrepancy? If we assume the relative temperature of venous and arterial blood to be fixed and invariable, it is very obvious that, while one class of observers is right, the other two must be wrong. I believe the discordant results of the various experiments which have been from time to time recorded to be due to the mode in which the investigation was conducted. It must be confessed that all have hitherto failed to convince others of the truth of the conclusions founded upon the several experiments, for the question is still generally regarded as a doubtful one.* But whereas some of these experiments may be considered merely as inconclusive or unsatisfactory,† I believe others can be shown to be obnoxious to fatal objections.

As an illustration of the former class, I will select the experiments of Dr. Davy, for none are better known or so often referred to. Of those upon the blood in the heart he says:—

"In each instance the animal was killed by the division of the great vessels of the neck; an opening was made immediately into the thorax, and a very delicate thermometer was introduced into the ventricles of the heart by means of a small incision. The operation occupied so short a space of time that in three instances the right auricle had not ceased contracting."‡

Now the objections to such experiments as these are rather negative than positive. Inasmuch as they were performed upon dead animals, in which the circulation and respiration had ceased, they are obviously exposed to so many sources of error that the evidence they furnish cannot be regarded as conclusive or satisfactory. It must be admitted that they still leave the question an open one.

But to those experiments which have resulted in declaring venous blood to be warmer than arterial, I believe this fatal objection will, with scarcely an exception, apply. The circulation has been so obstructed by the means employed, that the natu-

* It is worthy of notice that in the *last* edition of his work on Anatomy, Dr. Sharpey omits all allusion to this question. This silence is very significant.

† On this subject see especially Georg. V. Liebig (*Ueber die Temperaturunterschiede des Venösen und Arteriellen Blutes: Göttingen, 1855*), who enters into an extended criticism of previous experiments.

‡ *Researches, Physiological and Anatomical.* By John Davy, M.D., F.R.S. 1800. Vol. I., pp. 148-9.

ral changes which the blood undergoes in the lungs have been considerably impeded or altogether arrested; and, consequently, a state approaching more or less nearly to what is termed asphyxia has been induced.

Of those physiologists who have investigated the question, some have tested the comparative temperature of the blood in the arteries and veins; some, the blood in the two ventricles of the heart; others, and these constitute the majority, have employed both methods.

Now it is to be observed, that whereas experiments upon the blood in the vessels have generally agreed* in fixing the temperature of arterial above venous blood, experiments upon the blood in the heart itself have, on the contrary, yielded such apparently discordant results. It is in these experiments upon the heart that the pulmonary circulation has been obstructed. And it is not difficult to perceive the effect which obstruction of the pulmonary circulation must have upon the question at issue. If the temperature of the blood in the left ventricle be higher than that in the right, the increase must be produced in the course of the pulmonary circulation; consequently, whatever interferes with the respiration, must interfere with the change which is consequent upon it. This will be presently demonstrated.

In illustration of this statement, I will take the most recent of these experiments. Amongst other methods of ascertaining the relative temperature of arterial and venous blood, G. Liebig practised the following:—†

"A dog was killed, and a ligature tied tightly round the neck, to prevent the lungs from collapsing. In this way, as the pulsations of the heart lasted a short time longer, some of the blood would be arterialized by the air in the lungs, and more or less arterialized blood would therefore always be found in the left side of the heart. The thorax was then opened by as small an opening as possible, the aorta tied at its bend; and the vena cava superior close to the auricle; then, the dog being raised, and the ligatures drawn upwards, in order to make the opening in the vessels the highest point, thermometers were passed into the two ventricles, down the artery and vein. After the introduction of the thermometers, cotton-wool was placed in the opening of the thorax, in order to prevent any real difference between the temperature of the blood occurring from the difference in the thickness of the two ventricles."

In the first place, all the objections which apply to observations of this nature made after death, hold good against this experiment.

Moreover, the dog is not only killed, but immediately before death a ligature (stocking or handkerchief) is tied tightly around the neck, thereby producing the very condition which should be most anxiously avoided—a state of asphyxia. "In this way, as the pulsations of the heart lasted a

short time longer, *some* of the blood would be arterialized by the air in the lungs, and *more or less* arterialized blood would therefore always be found in the left side of the heart." Some! Unless the natural condition of the pulmonary circulation is maintained, and the normal changes are effected in the blood as it flows through the lungs, the experiment is a failure. Dr. Davy was aware of this, for he says*—"In death by asphyxia there is generally an accumulation of blood in the right ventricle; and in many instances I have observed, when the right ventricle has been distended with blood, little difference of temperature between the two sides of the heart;" and in a note he adds—"In instances of death by asphyxia, theoretically considered, it might be expected that the blood, returning from the lungs to the left side of the heart, not having been acted on by the air, and there having been no production of heat, would necessarily resemble venous blood, in temperature as well as in colour."

G. Liebig says the use of the handkerchief was to prevent the blood from being cooled in the lungs, by preventing the change of air. But in this way all natural changes whatever are prevented. I will endeavour to show hereafter that this and other similar experiments afford evidence of the very opposite nature to the conclusions which are drawn from them. No wonder that, "in the experiments on the recently-dead animal, the temperature of the blood in the right ventricle was found once higher, and twice equal, to that of the left." That is, the temperature of the blood in the left ventricle fell, in comparison with the blood in the right, according as the asphyxia which had been induced was more or less complete.‡

I repeat—the same or similar objections will apply to all the earlier experiments on the same side.

Still more recently C. Bernard has investigated this subject very elaborately, and with his usual skill and ability.† Bernard ascertained the temperature of the blood in the right and left ventricles by the following method:—A dog being conveniently fixed upon the back, he made an incision in the lower part of the right side of the neck, and isolated successively the right jugular vein and the carotid artery as low down as possible without penetrating into the chest. An incision was then made in the artery and vein, and a thermometer introduced into the left ventricle and into the right, and around it a ligature was placed upon the vessel, moderately tight, simply for the purpose of preventing the entrance of air into the right heart and the escape of blood from the left. "It is known when the left ventricle is entered, because the thermometer cannot advance further, and because it is shaken by the contractions of the heart. It is easy to enter the right ventricle down the jugular vein and through the auricle. For the left ventricle it is necessary, upon dogs, to

* Op. cit., p. 149.

* Including the beautiful ones of Becquerel and Breschet with the thermo-multiplier.

† Op. cit., pp. 19, 11. British and Foreign Medico-Chirurgical Review, vol. xii., 1868, p. 268.

‡ The results of G. Liebig's experiments upon the blood in the vessels of living animals form exceptions to the general rule. According to them, venous blood is constantly warmer than arterial.

§ Comptes Rendus, 1866, Septembre 15. Recherches Experimentales sur la Temperature Animale.

enter by the carotid, then by the brachio-cephalic trunk, and afterwards the aorta, to enter directly by it into the left ventricle. It happens sometimes that one tears, in this operation, the sigmoid valves of the aorta, and this accident will cause some disturbance of the circulation." To this he says he shall refer upon some future occasion, "when we study the modifications which the disturbances in the circulation effect upon the temperature of the blood. For the present we will only report upon the results obtained upon animals which were calm, and in which the conditions of the circulation were as normal as possible." He adds—"In my experiments I have always used a single thermometer, which I introduced successively into the right ventricle and into the left, repeatedly changing it, to verify by numerous observations my facts."

The experiments were subsequently repeated upon sheep. These animals having a very long neck, the origin of the vessels from the heart may be almost reached without opening the chest; consequently the operation can be accomplished with great facility. In them, also, comparative observations were made with the same thermometer, introduced successively and alternately into the right and left ventricle.

In these experiments, Bernard found that the blood in the right side of the heart is warmer than that in the left and concludes, therefore, "that the change of venous into arterial blood in the living animal does not coincide with an increase, but on the contrary with a diminution, of temperature."

Moreover, from previous experiments,* Bernard declares that the excess of temperature in the right ventricle is due to the blood which enters it from the liver by the inferior vena cava, for in the superior vena cava the blood is cooler.

It appears to me, that a moment's reflection upon the function of the cardiac and arterial valves will suffice to convince us of the effect upon the circulation which must attend the operation just described. When we consider their office, and the effect upon their action of introducing the thermometer in the manner described, I imagine we shall not be inclined to admit that in any such experiments the animals were calm, and "the conditions of the circulation as normal as possible." But it is needless to pursue this argument. I refer to a future experiment in proof of the validity of my objection.

Now, having endeavoured to show that previous experiments are open to certain fallacies which vitiate their results, or at all events to objections which militate against their conclusions, I propose to relate some of those which I have performed. How far they are imperfect or erroneous, I leave to others to determine. The purpose of Experiments 1 and 2 is to determine the relative temperature of arterial and venous blood in its natural and healthy condition. Ex-

periment 1 is upon the blood in the heart, and Experiment 2 upon the blood in the vessels.

EXPERIMENT 1.—In a dog under the influence of chloroform, I exposed the heart by removing a portion of the anterior wall of the chest immediately over it. During this operation, the left pleura was wounded, and the lung partially collapsed, but the respiratory movements were not apparently affected. The heart was acting vigorously and regularly. I first punctured the left ventricle with a trocar, and immediately introduced a thermometer. It rose to between 99° and 100°. In the same way, I placed another in the right ventricle, and it rose to between 97° and 98°. The shock occasioned by the use of the trocar disordered the heart's movements for a few seconds, but it soon recovered, and resumed its natural action. The thermometers remained stationary for some time. Then, as the respiratory movements became feebler, the right ventricle gradually became distended, and the thermometer in it rose to nearly 99°. Almost simultaneously that in the left ventricle began to fall, so that for a short time the two thermometers exactly corresponded. The left continued slowly to sink, and soon afterwards the right began to fall also, and so the temperature of both gradually decreased until I removed them. The heart was still feebly acting when the thermometers were removed, but the respiratory movements had entirely ceased. The application of chloroform was discontinued before the thermometers were introduced.

Post-mortem examination.—Both lungs were healthy, and crepitant throughout, very little collapsed, and remarkably free from congestion. Each ventricle of the heart was filled with a clot of dark blood.

In this, and in all my experiments, I previously tested the thermometers I employed, and ascertained that they accurately corresponded.

EXPERIMENT 2.—In a large dog rendered insensible by chloroform, the abdominal cavity was opened, and a thermometer was passed through the left renal vein into the vena cava immediately below the liver; it rose to 96°. Another thermometer was then passed through the arteria sacra media into the aorta immediately above its bifurcation; it rose to 97°. In neither case was the flow of blood through the vessel arrested. During the period the thermometers were kept in the vessels, and for some time after, chloroform was occasionally discontinued. The circulation and respiration proceeded naturally. Neither vessel was exposed more than was necessary, and the vein the less of the two. Both thermometers retained their respective levels; perhaps that in the vein rose more slowly to its maximum than the one in the artery.

A small aperture was then made (for another purpose) through the walls of the chest on the right side, between the fifth and sixth ribs, through which air rushed. The respiratory movements still continued.

The heart was now exposed by removing the anterior wall of the thorax in front of it. In

* Comptes Rendus, 1854. Août 18. From which he concludes that the blood in the hepatic veins is warmer than elsewhere, and that the liver is the focus of animal heat.

doing this the left pleural cavity was opened, and the lung collapsed. Afterwards no further respiratory movements were observed beyond some convulsive gasps. The heart was much distended, but still vigorously acting. A thermometer introduced into the right ventricle stood at 95° ; another placed in the left stood at 95° also. When the left ventricle was punctured, it was observed that the blood which escaped was as dark as that in the right. The heart continued to act for some time after the experiments were concluded. Both lungs when examined were found collapsed. This dog had not been fed for thirty hours previously, and the last meal had been a scanty one.*

These experiments need no comment; they speak for themselves. The diminution of the blood's temperature, when observed in the heart, and the equality of the two sides in the latter part of the second experiment, is explained by the fact that, although the heart was still acting, the respiration had previously ceased. (See Experiment 4.)

G. Liebig objects to the removal of a portion of the anterior wall of the thorax; for he says,† by exposing the heart in this way the blood is unequally cooled in the two ventricles. The wall of the right ventricle being thinner than that of the left, the blood contained therein loses its temperature more rapidly. In proof of this, he quotes experiments to show that when a thermometer is placed in each ventricle of the exposed heart in a dead animal, the one in the right falls more rapidly than the other in the left; that when a heart is cut out and immersed in water, a thermometer placed in the right ventricle indicates change of temperature more rapidly than one in the left; and that, lastly, when a heart is excised and filled with water, the right side cools more quickly than the left.

This objection is "specious, but not satisfactory." The experiments which he advances fail to support it, inasmuch as no circulation is going on. This constitutes an essential distinction. In his experiments fluid is stagnant in the ventricles; in the living animal there is a constant change. Experiments of this nature practised upon dead animals are certainly obnoxious to this objection; but that it cannot be extended to the case of a living animal in which the circulation continues is, I think, proved by the following experiment.

EXPERIMENT 3.—In a room, the temperature of which had been raised above 80° (it was as warm as we could conveniently bear it), a large dog, which had not been fed for more than twelve hours previously, was placed under chloroform. As small a quantity was administered as was compatible with apparent insensibility to pain. I immediately exposed the heart, with as little violence as was possible, and placed one thermometer in the right and then another in the left ventricle. I introduced them by first puncturing the walls of the ventricles with a small double-edged knife: a

few drops only of blood escaped. In the right the thermometer rose to 102° , and in the left to $102\frac{1}{2}^{\circ}$. The left pleura was slightly wounded in exposing the heart, but the animal still continued to respire and the heart to contract. For ten minutes the thermometers remained unaltered, indicating the same temperature as at first; then the left began to fall very slowly, and when it had fallen $\frac{1}{2}^{\circ}$, the right still maintained its original level. The fall of the left side followed almost immediately upon the cessation of the heart's action. After death, each ventricle contained a moderate amount of blood; they were not distended. The blood, both arterial and venous, was of the ordinary colour and appearance.

In this experiment, which is also a confirmation of the previous ones, the fact is sufficiently conclusive, that after the introduction of the thermometers the temperature remained stationary for ten minutes, and that then the first symptom of decrease was observed in the left. The details of Experiment 1 afford evidence to the same effect.

From some experiments which I have performed to illustrate the effect which a state of asphyxia has upon the relative temperature of arterial and venous blood, I select as an example the following:—

EXPERIMENT 4.—A dog, rendered insensible by chloroform, was strangled by a cord drawn tightly round the neck. The heart was immediately exposed by the removal of a portion of the anterior wall of the thorax. A faint tremulous action was still visible. The right ventricle was distended; it was slightly punctured, and a thermometer was introduced. It rose to $101\frac{1}{2}^{\circ}$. The puncture and the escape of a small quantity of blood were followed by much more decided and regular contractions of the ventricles. Another thermometer, introduced in a similar manner into the left ventricle, rose to 101° . The blood which escaped from this ventricle was venous in character. In the course of one or two minutes, both began to fall, but the right was rather in advance. Temperature of room, 60° .

Here, as in the experiments by Liebig and others, by preventing the change of the blood from venous to arterial in the lungs, the difference of temperature naturally existing in the ventricles is actually reversed. The loss of temperature observed on the left side in this experiment would doubtless have been more considerable if the means adopted to produce asphyxia had not checked to some extent the evaporation of fluid, and the consequent consumption of heat from the blood at the lungs, which occurs when the air is constantly renewed.

Experiment 5 was designed to show more fully the relation which exists between the natural change which the blood undergoes in the lungs and the elevation of its temperature. It shows that, when deprived of the action of oxygen, notwithstanding the pulmonary circulation continues, and its other conditions are fulfilled, there is a loss instead of an increase of temperature.

EXPERIMENT 5.—A large dog, having been ren-

* See future remarks. † Op. cit., pages 13, 14, 15.

dered insensible by chloroform, one thermometer was introduced through the arteria sacra media into the abdominal aorta at its bifurcation, and another into the inferior vena cava from the right common iliac vein, at about the same level. The circulation through the vessels still continued. The intestines were partially replaced, so as to cover the vessels. After a few moments, when the effects of chloroform were subsiding, the one in the artery stood at 98° , and the one in the vein at 97° .

The trachea was then rapidly exposed, and a large tube, with a stop-cock, was secured in it through which the animal respired freely, the thermometers maintaining their original temperatures. A bag, filled with pure hydrogen, was then fitted to the tube in the trachea, and the animal was made to respire that gas. Almost immediately, the thermometer in the artery began to fall; and, after a few seconds, both thermometers stood at the same level— 96° . Simultaneously, the blood was observed to grow darker.

The heart was then rapidly exposed. As the natural expiratory movements were failing, artificial respiration, by alternate compression and relaxation of the bag, was very easily kept up. The blood, which issued from several arteries, which were divided in exposing the heart, was observed to be quite dark. The heart was still acting regularly, but not vigorously; it was not at all distended with blood—on the contrary, it was rather flaccid. A thermometer was then placed in each ventricle; the one in the left stood at 96° , and that in the right at $96\frac{1}{2}^{\circ}$. The blood in both ventricles was quite dark; the lungs were pink—perhaps rather darker than natural. They expanded and contracted alternately with the action of the bag fairly and very freely; they were not perceptibly congested. When pricked, gas immediately issued from them, and they collapsed.

Experiment 6 is after the method adopted by Bernard. It illustrates the effect produced upon the temperature of the blood by disturbing the circulation in another way.

EXPERIMENT 6.—In a large dog, under the influence of chloroform, I exposed the carotid artery and jugular vein at the lowest part of the neck, on the right side; and having punctured the artery, I passed a long probe down it into the left ventricle, and secured it by a ligature. In the same manner I passed a second probe down the vein into the right ventricle. Then, while the probes remained as I had placed them, I exposed the heart by removing a portion of the anterior wall of the thorax, as in my previous experiments. Both ventricles were very much distended with blood; they were acting vigorously, but evidently labouring against the obstacle which the probes caused to their free action. A thermometer introduced into the left ventricle, stood at $102\frac{1}{2}^{\circ}$; another introduced into the right, stood at $103\frac{1}{2}^{\circ}$. After the lapse of a few minutes, the thermometers in both ventricles began to fall. The temperature of the room during the experiment was somewhat under 60° .

One word with regard to the use of chloroform in these experiments. Its employment appears to me to cancel one great objection to such proceedings. The severe shock and disturbance which such extensive mutilations must otherwise necessarily produce will always, I think, tend to invalidate, to a greater or less extent, the conclusion. Vivisections without chloroform are always more or less objectionable, and especially those on the circulation, for it is not possible to inflict pain without disturbing it; but under its influence the animal is passive and insensible, and the severest measures produce no apparent effect.

But the use of chloroform may be objected to in these experiments on other grounds, inasmuch as it has been shown,* that when animals are fully under its influence their temperature falls, and this effect has been supposed to be due to its direct action on the blood, which in some instances has been observed to become darkened.† I have anticipated this objection, and in answer to it I will simply state at present that, from numerous experiments, I have ascertained that the depression of temperature consequent upon the employment of chloroform is not an immediate effect, but only ensues after a considerable interval, varying of course with the dose, but always exceeding that during which its action was kept up in any of my experiments.‡ In none of these experiments was chloroform observed to produce the slightest effect upon the character of the blood. Moreover, if any error were due to chloroform in these experiments it must be on the right side; for chloroform must chiefly act, whether directly or indirectly in this respect, by diminishing the changes which the blood naturally undergoes in the lungs.

In truth, this last observation may be more widely extended. All errors connected with any disorder or disturbance of the circulation and respiration which these experiments involve must be on the right side. The rise in the blood's temperature, which is consequent upon the changes effected in it at the lungs, must of course vary as the conditions of the pulmonary circulation are fulfilled, and decline in proportion as those changes are diminished or in any way interrupted. For instance, the accidental puncture of the left pleura in exposing the heart, which occurred in some of the experiments, by preventing the full and complete expansion of the lung, could only act in this manner by diminishing to a corresponding extent the increase of temperature with which the blood returned to the left ventricle. In proof

* By Dumeril and Demarquay. *Comptes Rendus*, 1848, vol. xxvi. p. 171.

† Dr. Jackson examined the body of a woman who had been killed by chloroform. The blood had lost the power of coagulating, and of becoming red by exposure to the oxygen of the air.—*Comptes Rendus*, Feb. 25, 1854.

See also Chassaing, *THE LANCET*, 1867.

Mr. Gruby, on the contrary, concludes from certain experiments that the vapour of chloroform, so far from changing arterial into venous blood, increases the intensity of the red colour of arterial blood, and changes also dark blood in the veins to bright blood.—*Comptes Rendus*, 1848, vol. xxvi. p. 176.

Dr. Snow, *London Medical Gazette*, 1851.

Certainly neither of these contradictory effects can be regarded as simply due to the ordinary action of chloroform.

‡ See also the Experiments of Dumeril and Demarquay, *op. cit.*

and illustration of this I refer again to a previous experiment (No. 2).

It is right to mention that these experiments have not been performed very many times. I have repeated them only to satisfy myself and those who witnessed them of their accuracy.

Now, if these experiments be true, will they not assist us to reconcile the apparently discordant results of those which have been previously referred to? Whilst the first, second, and third show that, so long as the natural pulmonary circulation continues, the blood returns from the lungs to the left side of the heart warmer than when it was sent there from the right side, the fourth, fifth, sixth, and latter portion of the second, illustrate and confirm the statement, that in proportion as those changes are impeded and arrested, so will their natural result be correspondingly diminished or altogether destroyed.

The experiments of Bernard, Liebig, and others of a like kind, bear testimony to the same effect. Viewed in this light therefore, they do not contradict, but rather confirm, the fact which I have endeavoured to establish. They assist to prove that the relation between the change which occurs in the blood at the lungs and the elevation of its temperature is one of cause and effect.

There can be no doubt that the question whether arterial or venous blood is the warmer, is one of primary importance, for it must lie at the very foundation of any correct theory of animal heat. It is impossible to reconcile the fact that arterial is warmer than venous blood with the most current theory of the production of heat—that which removes its seat from the pulmonary and places it exclusively in the systemic capillaries. The admission of the fact that venous is cooler than arterial blood, turns one's mind from the modern theory in the direction of the older, and now almost forgotten one. But although incompatible with the assumption, that the only change which the blood undergoes in its temperature during its circulation through the lungs is a loss due to evaporation, it is by no means at variance with the belief that heat is generated during its circulation through the systemic capillaries also.

The doctrine most completely in harmony with ascertained facts, is that which refers the source of heat (1) to the action of oxygen inspired upon the blood as it circulates, and (2) to those changes between the blood and the tissues which are involved in nutrition.

That blood returning from the systemic capillaries is cooler than when it entered them, only proves that more heat is there removed from the blood than is produced in it by the chemical changes connected with nutrition. If it were not for these, and doubtless the changes still going on in the blood itself also, supplying, to a great extent, the demand for heat, the blood would be much more cooled during its passage than it is.

The following experiment will probably illustrate what is meant; it was practised on an arm a short period after death:—

Having secured a stop-cock directed down-

wards in the brachial artery just above the elbow, I connected it by means of an elastic tube, with a reversible syringe. In the tube immediately above the stop-cock, I placed the bulb of a thermometer, and another in the median basilic vein. By immersion in warm water, the temperature of the limb having been raised to 100° , I injected water of 100° as indicated by the thermometer in the tube, through the arm, until it escaped freely from apertures in the superficial veins in front of the elbow. After the injection had been continued very rapidly for some time, the thermometer in the vein varied from 85° to 90° , thus indicating a loss of from 10° to 15° during its circulation through the arm. After some time, the water returned less freely, and the limb became tense and distended.

Again: having passed a thermometer through the *arteria sacra media* into the aorta of a dead dog, and another into the inferior vena cava through either the renal or common iliac vein, and then having raised the body by immersion in warm water to the temperature of the living animal, I have rapidly injected from above water varying from 100° to 110° through the posterior portion of the body, allowing it to escape freely by the vena. After a short time, there was always a difference between the two thermometers of 10° or more.

This experiment is advanced as an illustration only. It is far too rough and imperfect to prove anything; but so far as it goes it shows how much heat may be abstracted from the circulating fluid by the tissues when no compensating production of it ensues. Such an experiment, if more skilfully repeated, would probably be attended with less loss, but always, beyond doubt, with much more than naturally occurs.

In relation to this subject, the fact is worthy of notice that, notwithstanding some apparent instances, it has never yet been satisfactorily shown that the temperature of any part, when unduly exalted, ever exceeds, under any circumstances, that of the blood itself. With regard to the local increase of temperature which occurs after injury to a portion of the nervous system,* Brown-Séquard concludes that "the degree of temperature of paralysed parts depends on the quantity of blood they receive, and this quantity varies according to the size of the arteries and capillaries of these parts."

When we consider the character and composition of our food, and its ultimate destination, it seems impossible to resist the conviction that a very large proportion of animal heat is produced in the blood itself by the direct combination of oxygen with certain of its constituents. It may be very difficult, if not impossible, to determine what proportion the amount of heat so produced bears to that which is generated by the changes which occur between the blood and the tissues; but, as an important element in the calcu-

* On Local Increase of Temperature following Section of Nerves See Bernard, *Comptes Rendus*, Août 18, 1866.
Also Brown-Séquard, *Experimental Researches applied to Physiology and Pathology*, 1868.
† *Op. cit.* 77.

lation, we must consider the proportion which the directly-combustible part of our food bears to the plastic. "It appears that in milk and in the different varieties of corn (which are the most perfect forms of nutritive matter), the proportion which the plastic bears to the respiratory materials are 1 of the former to from 3 to 8 of the latter."* Under these circumstances, it is hardly possible but that the amount of heat furnished by these two sources must be constantly varying, dependent as it is in a great measure upon external circumstances. Assimilation,† the quantity and quality of the food consumed, and therefore the materials introduced into the blood, the activity of the changes proceeding in the tissues, and other causes constantly operating, must influence the result. Therefore it is possible that some future investigations may detect a greater difference in the relative temperature of arterial and venous blood in herbivora than in carnivora.

But if it be admitted that heat is produced in the blood itself by the action of oxygen upon it, where is such action so likely to occur as in the pulmonary capillaries, where they first meet, and where the conditions for union are so favourable? Nor are facts wanting which directly prove that there is an immediate union of this kind in the blood at the lungs. Such, for instance, is the one recently discovered, that the sugar formed in the liver may be traced into the pulmonary artery, but is not found in the pulmonary veins. At the lungs it disappears from the blood.

It was objected to the old theories which referred the source of heat exclusively to the lungs, that, if it were so, their temperature would be very considerably above what it is.‡ The present doctrine cannot be considered at all objectionable in this respect, when the comparatively slight difference which exists between arterial and venous blood, the absolute temperature of the lungs themselves,§ and the extensive evaporation which is constantly going on there are borne in mind.

A similar remark will apply to another objection to the same theories, that $C O_2$ is still for some time given off from the lungs when no O is admitted to the blood. The present doctrine is quite compatible with the results of the experiments. The production of $C O_2$ would not be immediately arrested by the deprivation of O. The amount produced would be considerably diminished, but it might be found so long as the blood contained any O. The experiments, however, require repetition.

Our knowledge concerning the amount of the different gases contained in arterial or venous blood is at present too inaccurate and uncertain to enable us to found any conclusion upon it.

What is known, so far as it goes, accords perfectly with the doctrine that there is a direct action between the blood and oxygen at the lungs. There can be no doubt that O and $C O_2$ are contained in both arterial and venous blood, and that O exists in a larger proportion in the former. The evidence concerning $C O_2$ is less conclusive. Information on this subject is chiefly derived from the experiments of Magnus; but even these with respect to the latter point have been differently interpreted by different authors.*

Lastly, it is only fair to mention the experiments of Dr. Davy in relation to this subject. Dr. Davy conceived that he had demonstrated the production of heat by the action of oxygen on the blood. A very thin vial was selected, and carefully enveloped in bad conducting substances. To this a perforated cork was adapted, holding a delicate thermometer. Two or three cubic inches of mercury were then introduced, and immediately after it was filled with venous blood, kept liquid by agitation. "The vial was now corked and shaken; the thermometer included was stationary at 45° . After five minutes that it was so stationary, the thermometer was withdrawn, the vial closed by another cork was transferred inverted to a mercurial bath, and one and a half cubic inches of oxygen was introduced. The common cork was retained, and the vial was well agitated for about a minute. The thermometer was then introduced; it rose immediately to 46° , and, continuing the agitation, it rose further to $46^\circ.5$, very nearly to 47° ." In two other experiments, the details of which were slightly varied, there was an increase of 1° , and in one on arterial blood a rise of $\frac{1}{2}^\circ$.†

Now if these experiments were valid, they would prove a good deal, perhaps too much.

I have repeatedly performed the experiment of agitating venous blood, with different gases. These experiments were generally conducted in the following manner, after the method adopted by Davy:—Two twelve-ounce bottles were each provided with an accurately-fitting glass stopper, and a cork, through the centre of which a thermometer passed, reaching to within a fourth of the bottom. A similar quantity of mercury, varying from six to sixteen ounces, having been placed in each bottle, they both were rapidly filled with venous blood drawn from the jugular vein of a calf, and immediately stoppered. The blood always retained its venous appearance. In many instances, before abstracting the blood, the trachea was compressed so as to render it still darker. During coagulation, which proceeded very slowly, the bottles were occasionally shaken, to break up the clot. After a time, when the blood had attained a settled temperature, by means of a mercurial bath a certain quantity of oxygen was introduced into one bottle, and a similar quantity of hydrogen, or carbonic-acid gas, or common air, into the

* Elements of Chemistry, by W. A. Miller, M. D. V.P.R.S. Part III. p. 740. 1857. In women's milk, according to Liebig, the proportion of the plastic to the respiratory food is as 10 to 40.

† Bernard concludes, from certain experiments that after a full meal the difference of temperature between venous and arterial blood is diminished, but that the absolute temperature of both is raised. Op. cit.

‡ This objection was certainly fatal to Lavoisier's theory. It applied with less force to that of Sir H. Davy.

§ Berger found the temperature of the brain $104^\circ.5$, of the liver $106^\circ.4$, and of the lungs $106^\circ.5$ in the sheep.

* See Quain and Sharpey's Anatomy 1854, p. 54. Dr. Carpenter in his several works on Physiology. Handbook of Physiology, by W. B. Kirkes, M.D. 1856, p. 173, &c.

† Op. cit., vol. II. p. 173.

other.* Each was closed with the cork to which the thermometer was adjusted, and the temperature observed. Both were then shaken for the same period, being usually at the same time enveloped in flannel, and the temperature was again noted. They were then generally allowed to rest for a few minutes, and the temperature again observed. Sometimes the agitation was repeated twice or thrice.† The details of these experiments were often varied, more especially with regard to the relative proportion of blood and gas, and the size of the bottles.

Similar experiments were performed with arterial blood.

It would be tedious to record at length the whole of these experiments, and perhaps unfair to select only a portion of them. The results were not constantly uniform, but often variable, owing no doubt to slight variations in the details of different experiments. The general conclusion I drew from them were these:—

1. That when venous blood was treated in this manner with oxygen, its temperature was usually raised from 1° to $1\frac{1}{2}^{\circ}$ or 2° .

2. That when venous blood was treated in a similar manner with hydrogen or carbonic acid, its temperature was as frequently raised, and generally to the same extent.

3. That similar experiments upon arterial blood usually yielded the same results.

4. That in all cases the increase of temperature seemed to be the result of the agitation. By shaking water in a similar manner with air, a small quantity of mercury being present, I have often raised its temperature, though to a less extent.

I have ascertained from other experiments that the increase of temperature is not imparted by the hand or from any external source.

It is to be borne in mind that the character of the evidence which these experiments furnish does not depend so much upon their absolute accuracy as upon their comparative results. Two experiments at least were always performed at the same time, and under similar circumstances, with different gases. While the temperature was almost always raised in both instances, no excess was observed in the case of oxygen.

It appears then, from these, that we must distinguish between the facts and the conclusions in Dr. Davy's experiments. The temperature of blood treated with oxygen in the manner described does, as he states, rise; but it also rises when similarly treated with other gases. Even water, when shaken with common air under the same circumstance, rises too. It cannot, therefore, be admitted that the increase of temperature in Dr. Davy's experiments is due to the action of oxygen on the blood.

It is not to be wondered at that a repetition of these experiments should lead to a negative result, although they may appear upon the first view to be satisfactory and conclusive. If living cir-

culating blood, exposed to the action of oxygen under the most favourable circumstances, is only warmed to so trifling an extent, is it reasonable to expect a similar result from the imperfect action of oxygen upon dead coagulated blood? In these experiments, as in many others, Nature is too coarsely and clumsily caricatured.

At present there is no evidence upon which we can safely venture further into this inquiry. If, as I conclude from my experiments, arterial blood is warmer than venous, the increase of temperature must occur in the lungs as a result of those changes which the blood there undergoes. Of the nature of those changes little or nothing is known.

ON THE CONSTITUTIONAL ORIGIN AND THE CONSTITUTIONAL TREATMENT OF CANCER.

By WEEDEN COOKE, Esq., M.R.C.S.,

SURGEON TO THE ROYAL FREE HOSPITAL, AND TO THE CANCER HOSPITAL.

THE subject of my communication is one that has been the philosopher's stone of medical men of all ages; the battle-ground between the regular practitioner and the empiric; the shuttlecock of nostrums and theories as opposed and outrageous as they have proved useless or hurtful; the nidus in and on which mystery, superstition, charlatanism, and all kinds of deceit have batted, to the unfortunate delay of those yearnings after the truth which now most happily distinguish the hard-working and hard-thinking medical explorers of the present time. Miracles are not wrought now, although the great public still hankers after them in matters medical, and swallows greedily any boldly-put-forth tinsel imitations, whilst the calm progressive results of inductive thought, of reason guided by experience and knowledge, fail to secure the attention they deserve. Persistence, however, in the path of duty will, I am persuaded, ultimately and at no distant period obtain a mastery over even this disease. In order to arrive at this supreme good, I am emboldened to assert that we must go back to the times of Hippocrates and Celsus, and learn from them that no operation, whether by knife or caustic, will eradicate the disease; that we must admit at the outset the truth of the axiom of Euclid—"The whole is equal to its parts;" or, as the principle is still better expressed, "ominus major continet in se minus;" ere we can go to work at all scientific ally or rationally to investigate this malady.

Six years ago, by my appointment to the Cancer Hospital, I was enabled to devote myself to the special study of this disease. At the onset I found myself impressed with the established scholastic rule, that the scalpel was the remedy for cancer, and that, if that were inadmissible, the patient must be left alone, or at the most be propi-

* The difficulty of obtaining nitrogen absolutely pure was the reason why this gas was not employed.

† In these and other experiments Mr. Barford kindly assisted. I have very often availed myself of his skill in practical chemistry.

* So that it is not saying too much to affirm, that in any given instance we can determine by the means we adopt whether the blood on the left or on the right side of the heart shall be warmer.

tiated by sedatives. Some years of observation, upon upwards of a thousand cases, have passed over, and the conviction has been gradually forced upon me that the local manifestation of the malady deserves only a secondary consideration in the treatment: the whole system being at fault, remedies must be directed to the larger point of attack. Although of late years Velpeau and our own surgical schools have urged the necessity for local eradication, this teaching differed much from the instructions of the previous generation of surgeons, and the names of Sir Astley Cooper, Monroe, Carmichael, Abernethy, and Samuel Cooper, may be quoted in favour of a constitutional treatment. "He who looks at this disease in the light merely of a local affection," says Sir A. Cooper, "takes but a narrow view of it." That indefatigable pathologist, Dr. Carswell, also proclaims cancer a constitutional disease; whilst abroad, Scarpa, Cruveilhier, Boyer, Broca, Lebert, and a host of German writers, corroborate this opinion, and all who believe in a special cancer-cell must of necessity adhere to the same.

Beyond and apart from all speculative and theoretical opinions, there are certain undoubted facts, which those who are seeking after truth only cannot but accept as proofs of the systemic origin of the disease.

There is, 1st, the almost invariable return of the disease after extirpation at an earlier or later period.

2. An hereditary disposition is shown in a certain number of patients.

3rd. The evolution of the disease at a time when important changes are occurring in the circulatory system.

4th. The undoubted effect of depressing moral agents in originating the malady.

And, lastly, the evidence of numerous deposits of cancerous matter in many parts of the body, as seen during life, but more frequently found in the viscera after death.

In illustration of the first proposition—the return after operation—it appears that 128 persons have presented themselves at the Cancer Hospital who had been operated on, and the average duration of their freedom from any external sign of the disease was eighteen months. Some prominent cases have come under my care, the particulars of which must be omitted for want of space. Mayo operated on 100 cases, and considered that five only had been permanently benefited; Boyer admits of four cures only in the same number; and Macfarlane, who had operated on 118 persons, could not point to a single radical cure.

This second proposition—i.e., hereditary taint, must of course, if proved, go far to establish the constitutional origin. Velpeau says one in three have this predisposition; at the Cancer Hospital it has only been noted in one in six; and, by Lebert, in one in twelve cases. This forms at least a link in the chain of evidence.

Third proposition: Cancer, in its various forms, is seen at the commencement and at the end of our allotted days; but in the great bulk of cases

from forty-five to fifty is the usual period of its development. According to a calculation made by myself in upwards of 1000 cases, the average age is forty-three years and a quarter. This climacteric period of life is obnoxious to the most remarkable changes in both sexes. Many instances of these changes in man are recorded by Sir H. Hallford; and the physiological reasons for them are amply ventilated by Dr. Roget. But whilst the male is not exempted from alterations of structure and impairments of function at the turning point of life, it is the female who especially suffers at this period, from the cessation of that menstrual flow which was wont to assist so much in carrying off the effete matters of the system. This extra source of deterioration of the vital fluid accounts for the wide difference in the number of the two sexes afflicted with this malady. At the Cancer Hospital, the female patients are as six to one male. If the disease were a local one, why so constantly select this particular period of life for its manifestation? Some, believing in the constitutional origin, insist upon a local exciting cause to set up the action; but this even is scarcely supported by facts, inasmuch as one in seven only of the 1000 patients referred to knew of or suspected any direct violence to the part affected.

The effect of depressing moral agents has been noted by most authors, but rejected by some. Sir A. Cooper says, "Three-fourths of these cases arise from grief and anxiety of mind;" and my experience confirms this opinion. Material alterations in the blood are brought about under these circumstances. Atrophy of the red corpuscles, and increase of the colourless globules, may be observed; and thus the creative power of the blood is deteriorated, and the tissues which this ill-elaborated fluid forms show that defective organization which is seen in cancer. Whether the defect be a process of exudation or of impaired nutrition is a speculation difficult of solution, but I am inclined to the idea of deranged nutrition or degeneration of the tissues similar to the fatty degeneration now so fully recognised.

Finally, the distribution of the disease through the various structures of the body, together with another piece of evidence—viz., the impossibility of conveying cancer by inoculation, would seem to prove, by an accumulation of facts, the affirmative of the proposition that cancer is from within, that it has its origin from the centre, and that consequently any measures directed to the periphery only must of necessity be unphilosophical and ineffectual.

The constitutional origin of cancer being established, it becomes necessary to apply to this principle the actual test of practical experience founded on the observation of the course which Nature pursues when left to herself, and of the course and termination of the disease when Art endeavours to relieve it; and to prove, not the necessity for abstaining altogether from the scalpel and the caustic, but that the blood and bones and muscles, and all that goes to make up the animal

frame, require to be azotized, to be built up, to be so invigorated by physical, but perhaps almost no less by moral agencies, that it shall be impossible for this defective growth to go on. The whole being thus cared for, its part or parts (the local manifestation of the disease) may be usefully attacked. There are means to be referred to presently of assisting in the production of atrophy of the tumour from without, and there are cases in which hæmorrhage or excessive purulent discharge are so weakening the patient, that it becomes necessary, either by the knife or caustic, but far preferably by the former, under the blessed influence of chloroform, to remove this source of decay.

In a very large number of cases there is a period when the cancerous tumour ceases to increase, begins to diminish, and gradually to waste away; so that the prolongation of life is not in any way affected by the patient having been subject to this malady. This spontaneous cure of the disease has been noticed by Velpeau, as well as by Sir A. Cooper and other authors, and several cases of cure by atrophy could be recited from amongst the patients at the Cancer Hospital. If the *vis medicatrix nature* is sufficient even in a few cases to check the disease, may we not fairly expect that some of the means which we possess so abundantly for encouraging a healthful condition of the solids and fluids of the body shall be effective in the assistance of the vital powers to stop the further growth of the fungus. All medicines or dietaries of a lowering description I utterly repudiate, and even the iodide of potassium, which Velpeau says cured three cases of cancer, I have little inclination to employ, unless in combination with iron or some other tonic to counteract its depressing tendency. All the soporifics should be objected to, as adding to the dyscrasia, and when, from the entreaties of patients, it becomes necessary to have recourse to them, all hope of remedy must be put aside. Arsenic has formed the basis of most of the secret remedies which at regular intervals sweep over society, exciting all the superstitious reverence which more or less lurks in every breast, and has brought for a short period great grist to the magician's pouch; but, according to my experience, its usefulness, either internally or externally, does not compare to other more certain and less dangerous tonics and escharotics. Of all the medicaments which experience or theory has shown to influence this disease, iron in its various forms is capable of effecting the largest amount of benefit. In order to obtain this good in various constitutions, it is necessary to vary the form of its administration, and then to alternate this tonic with others. The mineral acids are most valuable, either alone or in combination with other drugs. A mixture of lemon-juice and sarsaparilla is, for delicate people, a most excellent appetizer. Bark in the form of the compound tincture is largely used with the greatest benefit at the Cancer Hospital, and cod-liver oil, as an adjuvant to other remedies, is serviceable.

Diet and moral management are of the utmost moment in the conduct of these cases. It would be impossible to lay down dietetic rules applicable to every case, since each person has his peculiarities, and must be managed in accordance with them; but it will be well to say that the system requires to be amply nourished and somewhat stimulated; that good meat, good beer, and a fair supply of good vegetables,—putting aside the nonsense of sloppy soups, and lenco-phlegmatic fish, to waste the appetite and distend the stomach,—are the grand indications as far as the important matter of diet is concerned, and wine may be taken according to advice. The treatment of the mind is not less important, and if we could eradicate the idea of the incurability of cancer, we should do much towards its cure. Hope would assist our efforts at restoration more perhaps than any physical agent. The diversion of the mind from the contemplation of the malady by the influence of genial society, by the cultivation of literature and science, and by change of scene in travel, has tended to the production of that atrophy of the disease, which is in fact its cure.

A few words yet remain to be said respecting the local treatment of cancerous tumours. It appears from the statistics at the Cancer Hospital, that 128 persons have presented themselves, who had been operated on previous to coming to the hospital, and that the average lapse of time before the return of the disease in these cases was eighteen months. From this it may be assumed with tolerable justice that operations do not generally cure the disease. There are, however, some cases in which removal of the local malady is desirable as tending to prolong life or remove unsightliness. One instance is that of the advanced hæmorrhagic stage of cancer which has already been referred to, and the other condition is where epithelial cancer attacks any exposed part, such as the lips, face, or extremities. The method of removal in either of these cases should be by the knife, under the influence of chloroform, for as to the revival of the treatment by caustics, now that we have the invaluable assistance of chloroform, I cannot imagine how such a necessarily prolonged and painful procedure can be recommended by the profession or tolerated by any patient who has the power to select the least of these two evils. *The knife can do, without pain, in as many minutes, all that the caustic can do, with pain, in as many days.* These two agents, however, in the local treatment of cancer are of infinitely less importance than those which assist in the induction of that atrophy of the tumour which Nature brings about in many cases, from mere *proprio motu*, and which Art may assist in promoting in many more. Of all the detergent remedies, lead in its various Pharmaceutical forms is the most efficacious. The liquor plumbi, alone or diluted; the lead cerate, and the soap cerate, which contains lead; the iodide of lead ointment, and the lead plaster, with or without adhesive plaster, are all, at different stages of

the disease, most invaluable adjuvants to the general constitutional treatment. It would be tiresome to enter into details of special applications for particular parts of the system, such as the chlorate of potash and hydrochloric acid lotion, and carrot poultice, to the ulcerated or sloughing breast; the borax lotion, and the application of the nitric acid or sulphate of copper to the tongue, &c. These are matters which practice teaches, and which may sometimes, perhaps, be varied with advantage, according to the taste or fancy of the surgeon, provided that the great principle be at all times kept in view, namely, that the local treatment, in cancer, whether by the knife or caustic, or detergent applications, is and must be second in importance to the general upholding and revivifying of the constitutional powers.

Upper Berkeley-street, April, 1857.

POSTSCRIPT TO A NOTE ON THE FATAL CASE OF CHLOROFORM; THE LABOURS OF DR. SNOW.

By MARSHALL HALL, M.D., F.R.S.;
OF THE INSTITUTE OF FRANCE; ETC., ETC.

To the Editor of THE LANCET.

SIR,—Subsequent to my note on Mr. Paget's interesting case, I have had my attention particularly drawn to Dr. Snow's paper on "The Cause and Prevention of Death from Chloroform." I especially allude to the paper printed from the *London Journal of Medicine* for April, May, and June, 1852.

I have no hesitation in affirming that the first three pages of this paper are amongst the most able and valuable in physiology, and I beg to be allowed to reproduce them in the pages of THE LANCET:—

"Chloroform, like other medicines which relieve or prevent pain, is capable of causing death if its action be carried too far. When a certain quantity of it is present in the blood, sensibility is so far diminished that surgical operations may be performed without pain: whilst a certain additional quantity has the effect of diminishing sensibility to such an extent, that the necessity for breathing (?) is no longer felt, the respiratory movements cease, and the circulation of the blood is by this means soon arrested. In some cases, as we shall see, sufficient chloroform is absorbed to arrest the action of the heart by its own influence.

"When animals, such as dogs, cats, rabbits, and guinea-pigs, are made to respire air containing from three to five per cent. of chloroform till they cease to breathe,—a process which generally occupies ten or fifteen minutes,—the heart can be heard to beat, by means of the stethoscope applied to the chest, for a minute or longer after the breathing has ceased; and it often happens that, about the time when the heart's action fails, the animal makes two or three gasping inspirations, which have the effect of restoring the contractions of the heart, which recommence with great rapid-

ity. If the animal has been withdrawn from the chloroform, these gasping inspirations have generally the effect, when they occur, of thoroughly re-establishing both the breathing and circulation; but if it is made to breathe the chloroform during these gasps, the action of the heart is again arrested, and the natural breathing does not return.

"When the same kind of animals are made to respire air charged with upwards of eight per cent. of vapour of chloroform, death occurs with great rapidity, and in a different manner from that just described. The action of the heart ceases about the same moment as the breathing. In three instances, indeed, it has ceased before the breathing, and although gasping inspirations have several times occurred after the chloroform was withdrawn, it has rarely happened that these inspirations have had the effect of restoring the heart's action.

"I have observed the manner in which the breathing and circulation ceased in twenty-nine instances, with the stethoscope applied to the chest of the animal, when the quantity of chloroform in the air they breathed was known; but the following three experiments will suffice to show the different ways in which death occurs under the influence of chloroform, according as its vapour is more or less diluted with air. I may here remark, that the results of the experiments mentioned in this paper can be applied with great propriety to elucidate what occurs in the human subject, both on account of the exact similarity between the effects of chloroform on the lower mammalia and on man, when confined within safe bounds, and also from the close resemblance of the phenomena caused by the less diluted vapour, to what has been described as occurring in the accidents to patients.

"EXPERIMENT 1.—A young but full-grown cat was placed in a glass jar, of the capacity of 1600 cubic inches, and a fluid drachm of chloroform was introduced, by a portion at a time, through a tube in the cover of the jar. As twenty-five minims of chloroform produce twenty-six cubic inches of vapour, the atmosphere which the cat had to breathe contained nearly four per cent. of vapour, and the jar was moved about to insure the uniform mixture of the vapour with the air. In five minutes the cat became insensible, and lay breathing naturally. In about ten minutes more the breathing became very feeble, and it ceased altogether in about another minute, or sixteen minutes after the cat commenced to breathe the chloroform. It was immediately taken out and laid on a table, and the stethoscope was applied to the chest. The heart could be heard beating distinctly at first, but the pulsations became slower and feebler, and in about a minute they could be no longer heard. Just at this time, however, the cat took a gasping inspiration, and immediately the heart was heard to beat in a most rapid manner. The gasps were repeated, and the action of the heart became less rapid but stronger. In a little time both the breathing and the action of the heart

became natural, the cat remaining, however, insensible for some minutes.

"EXPERIMENT 2.—A cat, of about the same size as the last, was put into the same jar, and the same quantity of chloroform was introduced. It was removed at the end of four minutes, when it was so far insensible as to offer no resistance. Being laid on the table, it was made to breathe air charged with ten per cent. of vapour of chloroform from a bladder. Twenty-five minims of chloroform were put into the bladder, which held 250 cubic inches, and it was filled up with the bellows. A portion of another bladder, which was attached to the stop-cock, was made to surround the head of the cat, and it consequently breathed to and from the bladder. In half a minute it was quite insensible; in about half a minute more, the breathing became difficult, and the sounds of the heart less distinct. The breathing became gradually slower, and ceased altogether between three and four minutes after the respiration from the bladder commenced. The sounds of the heart were rather frequent, and scarcely audible, just before the breathing ceased, and they could not be heard afterwards. The chest was opened three-quarters of an hour after death; the lungs were of a pale-red colour, everywhere permeated with air, and a small quantity of fluid blood flowed from them on making an incision; the right cavities of the heart were quite full of blood, and the left cavities contained a small quantity.

"EXPERIMENT 3.—A cat was made insensible in the same manner as the two previous ones. As it made strong efforts to get out of the jar, and consequently breathed more deeply, the chloroform took effect sooner: and it was removed and laid on the table, in a passive state, at the end of two minutes and a half. The respiration and sounds of the heart were quite natural. The nose of the animal was placed in the mouth of a metal vessel, lined with bibulous paper, and used as a chloroform inhaler; the inhaler contained chloroform, and was surrounded with water of the temperature of 110° Fahr.; the stethoscope was kept applied to the chest whilst the chloroform was exhibited. After four or five inspirations from the inhaler, the heart suddenly ceased to beat, the breathing still going on; the inhaler was removed as soon as I was satisfied that the action of the heart had ceased, and there were two or three rather convulsive respirations afterwards, and then the breathing stopped; but, between one and two minutes later, there were two or three feeble inspirations, accompanied with motion of the nostrils, but no returning action of the heart could be heard. The chest was opened ten minutes after death: the lungs were quite pale throughout; there was a little clear serum in the pericardium; the heart appeared quite motionless when first observed, but, after exposure to the air for a short time, there were some slight contractions of a few fibres of the right ventricle; the right auricle and ventricle were filled with blood.

"The air in the inhaler which this cat breath-

ed, probably contained between twenty and thirty per cent. of vapour of chloroform."

It is obvious that death from chloroform results from two causes, and assumes two forms: when the proportion of chloroform in the atmosphere breathed is limited to *from three to five per cent.*, the fatal result *begins* with defective respiration, or *apnoea*, and proceeds to asphyxia, and the Ready Method is the ready remedy; but when the proportion of chloroform amounts to *upwards of eight per cent.*, death assumes at once the form of *asphyxia*, with either *simultaneous* or *subsequent* apnoea, and there is, it is to be feared, *no remedy*.

This conclusion, which Dr. Snow drew from his admirable experiments, I drew independently from an attentive perusal of the accurate details of Mr. Paget's interesting case.

In looking over Dr. Snow's other papers, I have been much amused, on reading a page in *THE LANCET* of 1841-42, for October and November, to see the same war waged with the Royal Humane Society, in regard to the use of the *warm* bath in asphyxia, as is being again waged in the present day.

Dr. Snow showed, from the experiments of Edwards, that the warm bath must prove deleterious. Mr. Woodley contended then, as now, and with as little reason, and with the same discordance with physiological truth, that the warm bath *should* be used. Unfortunately, the remedy—the "Ready Method"—was not then discovered; and as no method of *promptly* producing artificial respiration—the *sole life-giving process*—was then known, error has continued to prevail over truth. The warm bath is not only not remedial—it is positively destructive; as the merest tyro may know for himself, who will carefully repeat a few telling experiments.

One statement by Mr. Woodley is a little remarkable: "he had not found artificial respiration of benefit *after* the warm bath failed to restore life" (p. 213): neither would he or anyone else find respiration of benefit *after*, not the warm bath only, but, "removal, the warm bath, and galvanism," had been tried in vain.

The lapse of fifteen years has not detracted from the accuracy and value of Dr. Snow's views.

We may now safely draw the following conclusions in the present state of science:

1. The warm bath in apnoea and asphyxia is a physiological and practical error;

In one case, at Boulogne, the patient having begun to breathe, was destroyed by being put into the warm bath.

2. In the absence of artificial respiration, the remedies are—free exposure of the surface to the breeze, and frictions of the limbs upwards, with pressure.

3. But the true remedy in apnoea is—*Respiration*; and this is happily instantly accomplished by—the "Ready Method;" or, as I presume I must now call it—the MARSHALL HALL Method.

April, 1857.

CONTRIBUTIONS TO THE PHYSIOLOGY, PATHOLOGY, AND TREATMENT OF SPERMATORRHOEA.

BY MARRIS WILSON, M.D.

(Continued from February No.)

PART V.

IMPOTENCY.—The asthenia which occurs as one of the ultimate consequences of different forms of spermatorrhoea has been separated from the mass of symptoms composing that malady, and erected into a distinct disease. In accordance with this arrangement, it has been described, by writers on the subject, under the name "Impotency," without any reference to the independent organs whence it derives its origin.

The condition really intended to be understood by this term is one in which the physical powers have diminished to an extent that renders impregnation of the female impossible. It therefore expresses only the ultimate symptom of the progressive failure in power of the affected organs; or, in other words, the consequences of exhausting diseases among the distinct portions of the generative apparatus. This incomprehensive application of the word has arisen from the want of a system of classification such as I have endeavoured to supply in the former portion of my work. Being thus used to denote an incapability in the power of impregnating, resulting from debilitated states of the collective organs of generation, it becomes a mere generalization; whereas the object of employing it should be that of particularizing certain distinct forms of disease. Now if the employment of this word be confined to a definite meaning, to the exclusion of a more general one, it may serve to represent the incapacity for impregnation, apart from its signification as a general result of depressed local generative action. We shall thus have a definition of conditions which may be classed as primary independent diseases, and include those states in which actual power may or may not be lost, but nevertheless presenting circumstances that render the patient afflicted with them as completely incapable of exercising the function of impregnation, as asthenia of the individual or collective organs. It is in this particular sense that I have employed the term to define certain distinct local and general affections; the first class depending on constitutional disarrangements,—the second, on defective and diseased organization.

The constitutional causes arise from peculiar irritable states of the brain and nerves, which by developing an excessive irritation in the cerebellum and spinal column, produce, through the medium of the sympathetic system of nerves, an immediate arrest of the functional power of the generative organs, or accomplish the same end, by the opposite effect of debilitating the vital force of the system generally. Many circumstances have a share, under particular conditions, in producing an irregular determination of excitement to the cerebellum and spinal column.

As this portion of the nervous system appears to be the special centre of the animal propensities, it is not surprising that the most animal amongst them, if I may be allowed the expression, should be one of the earliest affected. Thus it will be easily understood that stimulation of the cerebellum becomes a promoter of generative activity.

The first diseased condition which it is expedient to inquire into, is one displaying itself in a simple excitement of the brain beyond that point where the irritation exists as a mere stimulant to healthy function. This state, resulting as it usually does from common causes, is induced by any circumstance which overtakes the physical power of the body, as from long travelling, or violent and unwonted exercise; and it not unfrequently arises from long-continued and close application to study and business, whereby the mental activity absorbs, as it were, too large a proportion of the nervous sensibility which is required to be diffused generally through the system, for the purpose of effectively carrying on the functions of its different organs. The consequence of this state is to diminish the power of the generative system by concentrating in another direction the nervous influence which ought to be supplied to it. These conditions, although very evanescent, are, however, of sufficiently frequent occurrence to allow it to take its stand as a distinct disease.

The treatment proper to be adopted is of the simplest kind, consisting of some gentle opening medicine conjoined with rest and a redirection of the mind if possible to some less engrossing pursuit. In most instances two or three aperient doses will be found amply sufficient for relieving all the uncomfortable symptoms.

As the stage of excitement increases, the evidences of excess become more apparent, and assume a permanency in marked contrast with the evanescence of the former disease. This more active malady will be chiefly distinguished by a symptom affecting the character of the emissions, and the quality of the stimulation which accompanies them. The amount of irritability pervading the system and the generative apparatus is largely increased, and the agitation of the nervous system becomes extreme; hence it happens that emission constantly takes place before the act of intromission has been effectually accomplished. It is very obvious in a case of this kind that, though the incapability of impregnating is just as absolute, it depends on causes totally in opposition to those of Asthenia. The exhaustion liable to follow from the long persistence of the symptoms which constitute this phase of the disease naturally demands the greatest attention, both on the part of the patient and medical practitioner. To overcome the effects of the exhaustion will be our principal aim, but even that must be pursued with a due regard to the origin of the inflammatory symptoms. The first step requisite in the treatment is to endeavour to calm down the nervous excitation, and for this purpose hyoscyamus and camphor appear most serviceable. The next

is to diminish as much as possible the inflammatory tendency by gentle antiphlogistic means; but, above all things, it is at the same time necessary to preserve the strength of the patient by a well-regulated full diet. Happily this kind of attack readily succumbs under the influence of a proper management.

It occasionally happens in persons of very high nervous irritability that the venereal excitement develops in the brain so intense a commotion as to bring on an epileptic seizure. Fortunately such attacks are rare; but nevertheless they do happen, and, as their frequent repetition would prove very injurious to the patient, the possibility of their occurrence under favourable circumstances must be taken into consideration. The mere probability of their return is not, however, a sufficient motive for discontinuing venereal indulgence wholly, but merely as a reason why forbearance from excess should be practised. It is apparent that if an attack of this kind happens before the completion of the venereal orgasm, impregnation will be arrested. As it is not possible to anticipate when a seizure is likely to take place, unless we may have had the opportunity of learning by experience the premonitory symptoms in the individual cases, little can be done beyond a general attention to the health. The chief precaution to be observed is to ascertain whether the disease arises from excess or, as in various instances, from deficiency of nervous power, and to direct our treatment accordingly.

When, however, irritation is induced to a greater extent than happens in the forms described above, either directly, or by the transference of inflammatory action from a neighbouring organ, there will be developed a series of active symptoms, ranging to a degree of intensity which the system can barely sustain, and further increasing in their violence up to the very point at which disintegration of the cerebellar structure commences. These terrible symptoms, according to the effects they exhibit on the individual economy, constitute the forms of disease understood as priapism and satyriasis, and when developed in the female, nymphomania. But although this excitement be increased to an amount almost beyond endurance, yet throughout its whole course, from the point where the stimulation has commenced to become excessive, the functional capability will have been wanting. In these instances, however, the function is probably only in abeyance, but overwhelmed as it were by the violent reaction of the cerebellum and spinal nerves, directed towards the structure of the generative apparatus, though, at the same time, true incapability for impregnating, or impotency, actually prevails. When, on the other hand, compression of the cerebellum and spinal column results from the pouring out of the lymph as a consequence of inflammation, paralysis, both structural and functional, is occasioned more or less rapidly, in proportion to the degree of activity displayed in the progress of the symptoms, while at the same time the quantity and extent of the deposition will

determine its completeness. The deposition of lymph may also take place from inflammation depending on other causes, and it is by no means uncommon to discover that the first symptoms of deficient generative power, have followed closely upon the concussion, resulting either from a blow or fall, either to the brain or spinal column. The endurance of this state will very much depend upon the strength of the system and the activity of the absorbent vessels in removing the morbid deposit. Both these forms of disease are amenable to a proper plan of treatment, which must consist in subduing inflammatory action, and in promoting the activity of absorption.

I see no reason for altering, in any of its essential conditions, the usual antiphlogistic system of treatment by general bleeding, by leeches and blisters to the cerebral and spinal regions by the administration of aperients internally, and by the aid of opium, combined with calomel and tartar emetic. These three medicines will prove our main dependence in the earlier stages of the disease, and, indeed, till some progress be made towards a cure. The calomel should be pushed to such an extent as sensibly to stimulate the larger salivary glands, and this effect must be continued during nearly the whole term of the treatment. There is a point in the progress of improvement, however, at which the iodide of potassium may be made to render the most essential service, when judiciously guided. I must suggest a precaution that ought especially to be attended to, which is—by all means to avoid treating the local affections of the generative region, until the more active diseased conditions of the brain have been in some measure subdued.

The next and last stage in the progress of the disease happens as a consequence of disintegration of the structure of the cerebral centre. In recording the fact of impotency being thus caused, it is merely necessary to mention it, as one, perhaps, of the least among the fearful symptoms which follow the ravages of inflammation in the brain. Specific treatment, it need hardly be said, is quite out of the question; and, as no relief can be anticipated until after a remission of the cerebral disease, it is quite unnecessary to entertain the question of treatment in the present place.

The second division of impotency leads us to the consideration of a class of maladies that take their origin either from faults in development, or as the consequence of local diseases. The varieties of the former of these states, with a few exceptions, offer very little hope of cure; but those composing the latter, often yield sufficiently under treatment as to enable Nature's purpose to be accomplished, with a certain amount of completeness. The skilful application of the knife and caustic admits of relief being afforded in many apparently hopeless cases; and it must indeed be a rare complication of deformity which precludes the chance of some good being obtained. From the circumstances of cases of imperfect develop-

ment coming so entirely within the province of surgery, I do not think it necessary to enter on their detail; and even with those resulting from disease a mere enumeration and description of a few of the most important will suffice for rendering clear the arrangement of the following table. The most usual hindrances to the capability of impregnating are connected directly with unhealthy conditions of the urethra.

Stricture of that canal opposes, in a greater or lesser degree, the force of ejection of the fertilizing fluid, and sometimes becomes so rigid as to admit only of its oozing away gradually from the passage. Occasionally, in extreme cases, the impediment is sufficient to cause a reflux of the seminal fluid into the bladder, where it is apt to occasion much unpleasant irritation, and a tendency to inflammatory disease of its mucous membrane. It sometimes happens that inflammation of the mucous membrane of the urethra spreads chiefly around the openings of the ejaculatory ducts, and induces so large an amount of congestion as to obstruct the passage of the seminal secretions very materially. Swelling in the surrounding organs, such as the prostate gland, rectum, &c., also becomes occasionally a very active agent in increasing the impediments to which I have been referring. The devouring ulcers of syphilis are apt to occasion very serious distortions, and sometimes proceed so far as even to cause destruction to the entire organ. I have recently had a case under my care in which obliteration of some of the upper cellules of the corpora cavernosa had made a very remarkable deformity of the penis. Absorption had apparently been induced by inflammation, resulting from over-distension of the cells; and during erection the glans was projected at almost a right angle to its proper direction.

It will at once be perceived, that the treatment of conditions such as these must devolve more on surgery than medicine; and I do not, therefore, think it expedient to enter upon a relation of the plans that ought to be adopted.

For the purpose of a complete classification, it becomes necessary to consider impotency in every phase. Regarding it, therefore, in the abstract, we shall distinguish a third class of conditions, which, how far soever it may be removed from the category of disease, nevertheless must not be passed over without mention. I mean, that asthenic state or impotency following as the consequence of old age. So long as failing power depends only on the natural decay of vital activity, it should not be subjected to, neither does it admit of, any kind of treatment. With males, virility remains for a considerably longer term than with females; and, fortunately, there are usually a sufficient number of premonitory symptoms; and this state generally arrives so gradually as to diminish the anxiety that might occur on discovering, for the first time, a failure of power.

Closing this portion of my subject, I have embodied my views of the arrangements of these conditions constituting impotency in the following table:—

Impotency.

Constitutional changes from disease of the brain.

Simple excitement.
Irregularities of emission.
Epilepsy.
Inflammation of the brain and spinal column.
Compression from deposition of lymph.
Disintegration of structure.

Imperfect conditions of the organs.

Faults of development.
Results of disease.

Old age

Gradual cessation of vital activity.

Upper Charlotte-street, Fitzroy-square.

NOTE ON TRACHEOTOMY.

By MARSHALL HALL, M.D., F.R.S.;
OF THE INSTITUTE OF FRANCE; ETC., ETC.

To the Editor of THE LANCET.

I FEAR that we must still regard tracheotomy as a *heroic* remedy, only appropriate to *Herculean* forms of disease. Still our efforts should be to reduce the operation to its least formidable character, whilst we point out, not vaguely, but very *distinctly*, the cases in which it ought to be employed, being guided by the "*dignus vindice nodus*."

I am persuaded that life may be saved, where imminently threatened, by a simple pair of pointed scissors. The integument, being taken up horizontally by the thumb and finger of the left hand, should be divided longitudinally by the scissors; these should then be promptly forced into the trachea, to the proper depth, and opened horizontally to the just extent; the scissors must be then turned, being kept in their place, and opened in the direction longitudinally: the operator has thus made, in a little more than a moment of time, an opening through which the patient may breathe until further appliances can be obtained. Life or death depend meanwhile upon his steady hold of the instrument.

Instead of ordinary-pointed scissors, I have recommended such scissors properly *notched* on the external edge, so as to prevent their passing too deeply into the trachea on any sudden movement of the patient during the operation; and I recommended that *all* scissors, in surgical cases, be so notched.

The next step to be taken is to introduce a proper instrument for keeping the opening thus made into the trachea duly and securely patent.

The last and the *best* instrument of this kind, is, I am firmly persuaded, the simple dilator, or tracheotome, of which I here present to your readers a delineation and description:

It is obvious from its form that it may be compressed to the smallest bulk, introduced into the tracheal orifice, and allowed to expand within its edges, where it will become securely *buttoned*, whilst its expansion is limited to any extent required in infant or adult, by the thread of silk tied round the part exterior to the orifice. It may, of course, be made of any appropriate size.

It is almost needless to say, that the instrument consists of three portions of silver-wire placed



parallel to each other, and properly attached by a cross wire soldered at their middle part, and then bent until they are parallel again; and then joined at their extremity and turned up to secure the *buttoning*.

The instrument may be removed, washed, and replaced by any person of the most ordinary nerve and intelligence.

In regard to the cases requiring tracheotomy, I shall briefly on this occasion advert to three.

In epilepsy, the precise case in which tracheotomy is proper is *laryngeal* epilepsy, with *threatening to mind or life*, the effect of laryngismus and expiratory efforts.

I have reviewed all the cases which have been hitherto published, and, in spite of much puerile but mischievous criticism, I regard the result as highly satisfactory and encouraging. The last case, or the case of Dr. Ogle of St. George's, is in the highest degree interesting and replete with promise. The poor boy was reduced from repeated attacks of *epilepsia laryngea* to a state of idiocy. Tracheotomy was performed and his intellect returned.

Surely this is a glorious event in medicine! The case had been of long duration. But a few months after this admirable event the tracheal opening was allowed, *me judice*, most lamentably, to close, when the patient was away from London, and from Dr. Ogle's most kind and most judicious care. The poor boy, however, retains his intellect, is only subject to occasional threatenings, and anxious for some appropriate employment.

His mother, a poor washerwoman, who used to be up all night watching and controlling his dreadful fits, is full of gratitude.

The next malady in which tracheotomy may possibly be required to mitigate the symptoms, the suffering, and the present danger of the patient, is tetanus. This subject I cannot possibly illustrate better than by adducing the following most able, interesting and valuable document, from the pen of Dr. Wilson, of Nottingham:

R. G—, aged about forty; bilious subject; rather addicted to the pipe and the glass, sustained a compound comminuted fracture of the tibia and fibula, near the knee-joint. He was going on well, without a bad symptom, till the twenty-third

day. At breakfast on that day he perceived a slight stiffness about the jaw when eating. Seen at nine: tetanus suspected. Visited again at half-past two P.M.: still the same feeling, and inability to open the mouth wide. Decided, in consultation, to give extract of belladonna freely—two grains every four hours. At nine P.M. no alteration; patient quite cheerful, and himself and friends kept in the dark about the nature of the case.

Second day: Nine A.M.—Increase of stiffness of jaw; inability to open the mouth beyond three-quarters of an inch; no other symptom. Belladonna had not begun to have its characteristic effect. Friends informed of the true nature of the case.

Third day.—During the night the symptoms had increased. Spasmodismus had come on. The jaw could only be opened about half an inch, and suddenly snapped to again. Belladonna produced a powerful effect, causing dilatation of pupils and garrulous delirium, and appeared to check the spasms in some degree. No attempt had been made since the evening of the second day to give food or medicine by the mouth, but both were given freely by the rectum, and retained. Laryngismus came on at intervals, and preparation was made for opening the trachea, in case it should threaten suffocation. There was not much affection of any other muscles besides those of deglutition, and others in the neck. No opisthotonos, and little tension of the abdominal muscles. The patient was now constantly watched, and it was determined not to let him die of suffocation, if possible. He spat out his saliva, for any attempt at swallowing was usually followed by a fit of laryngismus. These increased by the morning of the fourth day so much in severity and frequency, and the patient was so nearly suffocated in one, that it was decided to open the trachea, *if only to give relief* to the horrible suffering. It was explained to the friends that there was but little expectation of his recovery, but that his life would be prolonged, and at the same time his sufferings greatly relieved, at the cost of a very trifling pain.

The operation was performed at the seventy-fifth hour after the commencement of the complaint, and the relief was *most signal*. Not only had suffocation become impossible, but it was evident that the *disposition to spasm* was almost annulled. It seemed as if the muscles had lost that cumulative action which, *crescens eundo*, went on to a climax, and only relaxed after *apnoea* and *perfect coma* had been produced. There was scarcely a spasm during the day, and respiration was freely maintained both by the nose and through the tube. There was difficulty in performing the operation, from the circumstance that a paroxysm came on during its performance, and the distended thyroid veins bled so copiously, that it was necessary to delay opening the windpipe. It was doubted for a few moments whether the patient was not dead. There was no further trouble when the tube was once introduced.

The patient passed a tranquil day, but the pow-

ers of life and the functions of the brain appeared much shaken. About five P.M. it appears he had a violent paroxysm, and afterwards went into a state of coma, in which he shortly died.

One consideration which induced the writer to urge the tracheotomy was, that he had attended a case of tetanus (tr.) a few weeks before, and had seen the patient die of suffocation at a comparatively early stage. He died in the third paroxysm of laryngismus. The second severe spasm of that kind had occurred at the forty-sixth hour of the disease, and had all but destroyed the patient. The writer saw him an hour after, and counselled the opening of the trachea; but while in the room another paroxysm came on, and the patient was dead in a minute. He rather regretted afterwards that he had not used his pen-knife to open the windpipe; but having since seen the difficulty in the other case, he doubts whether he would not have had the discredit of killing the patient by a vain attempt to save him.

It is somewhat remarkable that there has lately been another case (fatal) in the Nottingham Hospital, and there is a fourth at present a few miles from the town (all within four months), all traumatic tetanus.

In this case instant suffocation was again and again averted, and not only this, but the paroxysms of spasms were disarmed of their violence and pain. Instead of dying in an agony of suffering, the patient sank from exhaustion—an instance of comparative *euthanasia*.

It is not impossible that in another case the patient might even survive the effects of the nervous exhaustion.

What has been briefly said of tetanus may also be said of that direst of all human maladies—hydrophobia. The patient is a prey to the most fearful and agonizing fits of suffocation. These would be disarmed by tracheotomy. Would the patient's life be then sufficiently protracted to allow of the elimination of the poison from the system?

In any case the patient would die a less fearful, less agonizing death. The efficacy of tracheotomy in epilepsia laryngea, and its effects, is as pointed out as that of the Ready Method in apnoea (or asphyxia).

ON THE COMBINED LOCAL AND CONSTITUTIONAL TREATMENT OF HOOPING-COUGH.

By RAVENHILL PIERCE, M.D.

As I consider it the duty of every medical practitioner to bear testimony to any successful method of treating any peculiar disease which may have fallen particularly under his notice, I beg to press upon the profession the plan I have adopted in that troublesome and painful-to-witness disease—Hooping-cough. In *seventy-five* cases (thirty-two boys and forty-three girls), varying in age from two to eight years, which came under my care during last autumn, in a school containing over a thousand children, I used the local treat-

ment recommended by Dr. Eben Watson,—viz, sponging the glottis once a day with a strong solution of nitrate of silver (one scruple to one ounce of distilled water), by means of a curved probang; and in combination with this I ordered Dr. Gibb's nitric-acid mixture (dilute nitric acid, twelve drachms; compound tincture of cardamoms, three drachms; water, one ounce; simple syrup, three ounces and a half), a teaspoonful every three hours. I also from the commencement gave a teaspoonful of cod-liver oil twice a day, and at the same time kept the patients on generous diet and in warm yet well-ventilated rooms.

Now, this treatment has in my hands been invariably successful, and the little sufferers have not only escaped all those troublesome and dangerous complications which so frequently attend and follow hooping-cough, but have at the termination of their illness, in numerous cases, gained both flesh and stamina. I am perfectly aware that both the nitrate-of-silver and nitric-acid plans have been used separately, but I have not heard of the two methods being combined.

I am desirous of calling particular notice to the fact of my having given cod-liver oil from the *very commencement* of the attack, instead of waiting till the period of convalescence; and to this as well as to the generous diet, I, in a great measure, attribute the satisfactory and non-debilitated state of the patients at the time of their recovery.

I would also mention that after a few applications of the solution of nitrate of silver I have found that the force of the peculiar spasmodic cough has been diminished in frequency and intensity, and the shock to the system caused by the straining and convulsive efforts of the patient consequently much lessened. If any of the numerous readers of THE LANCET have already pursued a similar plan of treatment, I should be very glad to learn the result.

Hatton-garden, March, 1867.

CANNOT ENLARGEMENT OF THE MIDDLE LOBE OF THE PROSTATE GLAND BE REMOVED BY THE LATERAL OPERATION OF LITHOTOMY?

By GEORGE D. GIBB, M.D., L.R.C.S.I.

SOME months ago, I had under my care a case of enlargement of the middle lobe of the prostate gland, which had commenced to produce all the inconveniences and miseries arising from the obstruction to the flow of urine, from the flapping forwards of the tumour and closing the internal orifice of the urethra, like a valve, on passing urine. Now it struck me at that time, as well as on many other occasions, that in cases of this peculiar affection, where the poor patient oftentimes suffers greater misery than from the presence of a stone in the bladder, relief might be obtained permanently and effectually, by going through the steps of the lateral operation for stone, and cutting away this middle lobe. I seriously contemplated the propriety of its performance on one of my own

patients, and think it as well to throw out the hint to those hospital surgeons who are in the way of giving it a trial.

Should the result prove effectual—and I see no reason why a patient should not have as good a chance of recovery as in many cases of stone—then it will be one of the greatest triumphs of the surgical art in modern times. What surgeon will be the first to try it? I am induced to send this short note, from witnessing the operation for stone, at King's College Hospital, this day week by Mr. Ferguson, in which that distinguished surgeon excised the middle lobe of the prostate, besides removing two calculi.

Guildford-street, April, 1857.

CAMPHOR AS AN ANTIDOTE TO STRYCHNIA.

By E. W. PRITCHARD, M.D., M.R.C.S.E., Fife, Yorks.

THE following case of poisoning by strychnia, successfully treated by the administration of camphor, may prove interesting, as bearing witness to the valuable discovery of so simple and easily-to-be-obtained a substance being an antidote to that most violent poison.

At eleven P.M. on the 18th of March I was summoned to a village three miles distant, to attend upon J. P.—, aged about seventeen, a maidservant in the employ of Mr. A.—, a farmer, who, it was stated, had wilfully taken poison,—viz., a threepenny packet of "Battle's vermin-killer." I found her in the most violent tetanic movements; the limbs, and indeed the whole frame, severely affected by electric-like shocks, accompanied by opisthotonos, which raised the body from the bed in an arched form. These symptoms were especially increased on touching the surface or making a sudden noise, when her movements were indicative of the greatest agony. She afterwards referred her most acute sufferings to the region of the dorsal vertebrae. Her respiration was laboured and gasping, and the entire surface of the body bathed in profuse perspiration. Mustard emetics mixed with camphor were instantly administered, and were swallowed, though with difficulty. These were speedily rejected by vomiting; after which, a continual stream of water was injected, and withdrawn by the stomach-pump. Camphor in the solid form, from three to five-grain lumps, was then swallowed by her eagerly, as she now appeared to be anxious for recovery. The strychnism had now increased in severity; the respiratory muscles were apparently paralysed, and she gasped for breath. I now produced respiration by Marshall Hall's Ready Method, with marked relief, still giving the camphor. In about twenty minutes the tetanic movements gradually subsided. I then gave her a mixture of opium and camphor. She would now utter screams about every quarter of an hour; these at length became less and less frequent, and she fell asleep, breathing freely. From this time the recovery was rapid. On the

following day she merely complained of muscular pain, great stiffness, and headache.

CAMPHOR AND EPILEPSY.

By JOSEPH O. BROOKHOUSE, Esq., M.R.C.S.

THE following case occurred to me in the practice of Guy's Lying-in Charity:—

E. P.—, aged thirty-two, a multipara, and apparently healthy woman, after a natural labour, was ordered the usual after-pain mixture, consisting of spirit of camphor and tincture of hyoscyamus, of each twenty minims, in mucilage, repeated every three or four hours, as might be necessary. About five minutes after taking the first dose she was seized with vertigo, impairment of vision, and almost immediately became insensible. She foamed at the mouth, and there were general twitchings of the muscles, more especially those of expression. No urine or fæces were expelled during the fit, which lasted nearly six minutes. On recovering consciousness, she was quite ignorant of what had transpired, did not complain of inconvenience, and convalesced without any unpleasant symptoms. The above circumstance brought to her mind the fact of her having been affected in a somewhat similar manner eleven or twelve years ago, after eating a piece of camphor about the size of a nut, the only difference between the two attacks being the duration of time with reference to the development of symptoms as well as period of recovery—a difference which may probably be explained by considering the form in which the drug was taken.

April, 1857.

ON PARALYSIS ARISING FROM SYPHILITIC AFFECTION OF THE BRAIN.

By HUGH THOMSON, M.D., Glasgow.

THE following case presents some points of interest, and I would crave space for it in your journal:—

On the 18th of July, 1856, I was called to R. M.—, aged thirty-two, of robust frame of body, affected with paralysis. Symptoms of paralysis first manifested themselves about three months previous, and began with a weakness of the right upper extremity, which came on so gradually that he could not say the precise time it commenced. Shortly afterwards, the right lower extremity became similarly affected; in about a month the sight of the left eye was observed to fail; and, at the end of another month, the left lower extremity began to be affected. These symptoms daily increased in intensity up to the date of his coming under my care, when his state was as follows:—Unable to raise his right hand to his head, or to hold a light object in it above a few seconds. Paralysis is fully greater in the right than in the left lower extremity, and its extent may be judged of by the fact, that he is obliged to steady himself by resting his hand on the table

whilst walking across the room. Sensation is much deadened in all the parts affected with paralysis. The sight of the left eye is much impaired, and he closes it on looking attentively at anything, as when it is open objects appear double. No inflammation of the eyes or squinting exists, but he complains of pain in the left eye and right temple. The bladder is considerably affected, the urine being voided with difficulty in small quantities and often; the hypogastrium full; the bowels constipated.

I learned from him that he had always enjoyed good health until three years before, when he had the misfortune to contract syphilis. The primary sore soon healed—almost without treatment. Three or four months afterwards, a secondary eruption, of a scaly character, accompanied with sore-throat, &c., showed itself. This eruption disappeared under mercurial treatment, soon to reappear on leaving it off, as it was not persevered in beyond three or four weeks. About two years from the date of the primary sore, an eruption of a different character broke out, consisting of boils, giving rise to ill-conditioned ulcers, the cicatrices of which are to be seen on the arms, legs, and shoulders. These healed up under the use of the iodide of potassium.

From the history of the case, having no doubt as to its true nature, I immediately put him upon a course of the iodide of potassium, the efficacy of which in the advanced stages of constitutional syphilis I had often witnessed in M. Ricord's clinique at the Hôpital du Midi, as well as in my own practice. In two or three days the pains he complained of in the head were gone, and in a week a manifest improvement had taken place in all the paralytic symptoms, as also in the sight. The same treatment was continued with slight interruptions until the beginning of November, with steady amendment, the parts last affected being the first to recover. His condition then was—able to walk with scarcely any perceptible halt; urine voided as in health; sees almost as well as ever, the only defect being a tendency to turn the right side of his head forwards on looking attentively at an object; able to carry his right hand over his head, to shave, eat, write, &c., with it.

Since that date the improvement has been very trifling, and it is to be feared a certain degree of paralysis will be permanent, as in all probability, from the very long period that elapsed ere the appropriate treatment was begun, a portion of the nervous substance has been destroyed.

The case illustrates the insidious and chronic character of paralysis proceeding from syphilitic affection of the brain, the power of the iodide of potassium in curing it; and the necessity of beginning the treatment before the disease has destroyed the nervous matter, as the paralysis is then incurable.

Glasgow, March, 1887.

THE FOOD QUESTION IN FRANCE.

By ROBERT KNOX, M.D.

TO ISIDORE GEOFFROY (ST. HILAIRE), MEMBER OF THE INSTITUT.

MY DEAR SIR,—I have taken the liberty of addressing the following letter to you on two grounds. The first is, that a friendship of more than thirty years is a sort of security for its being well received by you. The second is, that I find your name prominent and forward in a proposal to extend to France the benefits of adopting a kind of food which has never been used by any civilized nation—which belongs indeed to a rude and savage condition of society; which is resorted to by the races of men capable of civilization only under the severest pressure of want, and which, even in the antique barbarous condition of mankind, appears to have been had recourse to only by one or two peculiar races of men—the hippophagous, strictly so called. On the Scythian desert, the Mongol, the Calmuck, or the Tartar, constituted the horseflesh-eating race. In Africa the practice is confined to the Yellow, or Bosjesman race. The savage Caffre, the not over-nice Negro races, never touch horseflesh. It might seem an exception to this, that the huntsman, to whatever race he may belong, will occasionally partake of the flesh of the zebra or quagga, in the absence of food more to his liking. Under these circumstances, I have myself tasted the flesh of these wild horses; for such, no doubt, they are. Their flesh is simply carrion, disguise it as you will; the feelings of all other races of men, excepting those just mentioned, are against its use. To resort to it is a matter of taste or indifference; but to be compelled to resort to its use—for, in point of fact, it amounts to this—argues an unwholesome condition of the social position of a nation.

As a preliminary to all civilization, the social condition of a country must first of all be placed on a sound, healthy, and even luxurious basis. By social condition, I mean the position of the inhabitants of all classes in regard to the three great considerations, which, indeed, supersede all others. These, of course, are—food, clothing, shelter; victuals, dress, houses. These do not constitute civilization any more than gold and silver, vast manufactures, enormous highly-disciplined armies, or numerous mercantile and mechanical classes rolling in wealth; but they form the basis when combined out of which civilization springs. A gentleman who has written a great deal about the history of France, Mr. Alison, goes further even than this. He estimates the social condition of a country by the amount of animal food consumed by its inhabitants. In this scale, which only an Englishman could have thought of, he weighs the social condition of England against France, assigning the superiority of the former to the much larger quantity of animal food consumed in England than in France, amounting, as he seems to think, to about a fifth. Perhaps you

take the same view; but being a Frenchman I can scarcely think so. But, be that as it may, you cannot equalize the condition by adding to the French scale a sufficiency of horseflesh—that is, carrion—to make up the *deficit*. Would it not be better to improve the breed of cattle in France, and to learn the art of fattening them—an art in which the English excel all other nations? This fattening process is the test of health and soundness of the ruminant, for animals of that class which do not fatten when well fed are clearly unhealthy and unwholesome as food for man. The ill-fed ox also, over-driven and under-fed, becomes in like manner unfit for man's use. Animals thus reduced, whether by a defective constitution, or by a negation of proper food are especially subject to intestinal worms, and other entozoa, and using their flesh as food seems to extend the disease to man himself. So at least it appeared to me in 1819 and 1820. At that time, as an army surgeon, I accompanied the army which entered Caffraria, under the command of Colonel Willshire. The main body crossed the Great Fish River, marching on the Keiskamma. I accompanied the left wing, composed of cavalry. Our route was beyond the Winter Bergen, across the Bontebok plains, returning to the base of the Anatol a by re-crossing the mountains at the sources of the Kat River, and joining the main body on the Keiskamma. The united force then marched to the Kai, from whence they returned by the Great Fish River to the colony. Before we left the Caffre country the number of cases of *tænia* was almost incredible. The disease attacked all ranks. I ascribed its occurrence then to the use of *unwholesome beef*, and have seen nothing since to induce me to change that opinion.* The horse, placed under similar circumstances, is liable to similar diseases.

To supply France with a sufficiency of excellent animal food, drawn from the class *Ruminant* (the only animal food adapted for civilized men), you must attend first to the breeding and feeding of your cattle and sheep. In travelling from Paris to Bruxelles, which I did last autumn, it was easy for me to know when we had entered Belgium by the superiority of the cattle. I know not how this is to be remedied, France being a wheat and wine producing country, and not a pastoral, excepting by extending the empire, and adding a European pastoral country to it. This step, so easy under a republican form of government, becomes one of great difficulty under an imperial or any other dynasty. You must look, therefore, to Africa for an extension of subsistence, population, and natural power which the great network of family alliances renders daily more and more difficult, not to say impossible, in Europe. The meshes of this great family net, assuming the form of the net called *seine*, is being extended so rapidly around the compact but small empire of France (formerly a province, and not a very important one, of the Roman empire), that there

will soon not be a sally-port left open for the ingress and egress of the great Celtic race she represents. Already penned in on all sides, you must look to that fertile land, Africa, whence imperial Rome drew most of her supplies. Soon the Mediterranean may, as it were, be bridged over by steamvessels of great power, bringing France and Africa within a short distance of each other. In no country does animal life thrive better than on the African continent, and on it you will find, not only ample supplies of food—that first of all considerations,—but space for the extension of the Celtic race and empire of France.

To this subject I may take the liberty of calling your attention in a second letter. In the meantime the endeavours to increase the supplies of other kinds of food, such as the artificial breeding of fish, &c., scarcely merit notice. They are interesting and amusing enough in their way, but lead to no practical results. I cannot find, for example, that the millions of fine trout said to have been bred artificially in or near the Moselle have affected in the slightest degree the price or the quantity of these fish in the Parisian markets; whilst, as regards that noble fish, the salmon, what we find done in France amounts merely to some amusing experiments, leading to no results of the slightest value, scientifically or practically. I have before me the latest newspaper notice respecting certain of these experiments, so well calculated to amuse a capital where amusement and variety are almost as essential to the inhabitants as food itself. The notice is as follows:—

“ARTIFICIALLY-REARED FISH.—The Strasburgh Railway has just brought to Paris, for the Exhibition in the Champs Elysées, about 3000 fish from the Artificial Piscicultural Establishment formed at Thuringen by the French Government. They consist of salmon from the Danube, trout from the lakes of Switzerland, and grayling from the Lake of Constance. These last named have only been hatched this spring. The salmon and trout are fourteen months old, and are $4\frac{1}{2}$ to $6\frac{1}{2}$ in. long. There are two salmon three years old, one of which is nearly 19 in. long by 13 in. in circumference. These fish are conveyed in cylindrical reservoirs made of tin, the water being renewed frequently.”

Such experiments are amusing enough, but of no value. If, instead of artificially breeding and rearing these little fishes, they had been permitted to return to the ocean, or to remain in their native streams, they would have exhibited very different results. A young salmon of 4 in. in length, and as many ounces in weight, when permitted to proceed to the ocean, returns to the rivers in about six weeks from 5 lbs. to 8 lbs. weight. Left to Nature, the salmon will grow to about 25 lbs. in three years, without cost or trouble to any one; reared and fed at the piscicultural establishment at Thuringen, he will not in the same time have reached a weight of 5 lbs., if half so much. Wild animals must be left to them-

* Edinburgh Medical and Surgical Journal, 1821.

selves; but the domestic you may influence, modify, and even improve, within certain limits. In the meantime France will do well to direct her attention to Africa. At a seemingly great distance, and in the remote south, a small cloud is gathering, perceptible only to those who comprehend the full meaning of such phenomena. Ere long that cloud will assume tremendous force and importance, bursting on Central Africa like an impetuous and irresistible torrent. At the present moment the little cloud may to imperial France seem contemptible, but you will find it otherwise. To lay aside metaphor; the go-ahead Saxon is on the *spoor* of the natives of Southern Africa. Of these the long-armed, energetic Boor will make short work. The English follow, merely, as it were, to see fair play, but in reality to crush the exhausted combatants, and skilfully appropriate the disputed territory to themselves. Let France move, and speedily too, or else she may be too late.

In my next letter I shall endeavour to place the matter before you in a clearer light.

I remain, my dear Sir, your sincere friend,

R. KNOX.

May, 1867.

HISTORY AND PRACTICE OF URETHRO-PLASTY.

By HENRY THOMPSON, M.B., F.R.C.S.,

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(Continued from March No.)

No. IV.

RESPECTING the propriety of first making an opening into the urethra from the perinæum, in order to divert the stream of urine from an antescrotal fistula, which it is proposed to close by a plastic operation, Dieffenbach wrote as follows, after the experiment had been tried and found successful:—

"There is still an important remedy in order to secure the success of the larger urethro-plastic operations, by avoiding the effusion of urine, and so promote the union of the borders of the wound by sutures: this is, the making an opening into the canal at its posterior part, and the leading away the urine from thence by an elastic catheter introduced into the bladder. I naturally arrived at this idea from the well known observation, that when two openings exist in the canal, one anterior, the other posterior,—the former heals without difficulty after cauterization, provided the posterior be large, and permits the urine to flow through it. Still more certain is this to happen when we introduce a catheter through the posterior opening into the bladder....It is very probable that Ségalas is indebted to the co-existence of perineal with antescrotal fistulæ, for the reparation of important defects of the latter kind, so that he could prevent, by the use of the catheter through the posterior opening, the contact of urine with the place of operation. The incision into the canal for

the leading away of the urine from the place of operation, is never indicated with small fistulæ; as we should then be curing a small evil by means of a greater one. We should only apply this operation to cases with considerable loss of substance, in which case the balance of advantage will be on our side, as having closed the great (anterior) opening, we shall have only the smaller (posterior) opposed to us."

He then goes on to describe the ordinary method of making the boutonnière, or median incision into the urethra from the perinæum upon a grooved staff, and introducing a catheter into the bladder through it; and adds, "Every two or three hours the urine is to be drawn off through the catheter. Only when the anterior opening has been soundly cicatrized after the autoplasmic operation, are we to introduce a fresh catheter, and occupy ourselves with the cure of the perineal opening, which generally follows without difficulty when we permit that catheter to remain throughout the whole track of the urethra, and frequently cauterize the perineal opening."*

But Dieffenbach was not the first to open the urethra behind a fistula for the purpose of facilitating the performance of urethroplasty; nor indeed until late years does he appear to have considered it a measure to be advised, although he may have been the first to suggest the possibility of its offering a means of success in obstinate cases; and he qualifies the advice at that time by adding that "he has renounced the method,"† that is, on theory, on the ground that although the anterior fistula might heal through the agency of the newly-made opening, yet that the latter might not improbably itself become obstinately fistulous. Of this result, however, practice has demonstrated that the fear was wholly groundless, and his more matured views already quoted show that he subsequently ceased to entertain it. M. Ségalas, whose name is well known in connexion with urethroplasty, was the first to test the method in practice, which he did in the case of a patient who had fistula both before and behind the scrotum. He maintained a catheter, and diverted the urine through the perineal opening, while he closed the anterior one by operation. An account of this case is given in the form of a letter to Dieffenbach, published in 1840,‡ in which he states his belief that urethroplasty had failed simply from the circumstance that it was extremely difficult to prevent the contact of the urine with the parts to be united, and he laid it down as a principle that it is generally desirable to divert the urine temporarily from its natural course, by making an opening in the perinæum, and carrying a catheter from that opening into the bladder, where considerable antescrotal fistulæ exist.

M. Ricord successfully performed a urethro-plastic operation in 1840, having first made an

* Dieffenbach, Op. cit. pp. 566-7.

† "Sur quelques nouvelles méthodes pour obtenir la guérison des ouvertures, &c." A paper in the Gazette Médicale de Paris, 1838. By J. F. Dieffenbach. The suggestion also appears in the author's early work, "Chirurgische Erfahrungen." Berlin, 1839.

‡ "Lettre à Dieffenbach." Paris, 1840. 8vo, p. 48, avec planches.

artificial opening in the perinæum, precisely in accordance with the proposal of M. Ségalas, published in the pamphlet referred to. On a consideration of these circumstances, the Montyon prize of 1841 was divided between MM. Ségalas and Ricord by the French Academy, as indicating its appreciation of their improvement in practical surgery.

In returning to the history of urethroplasty as performed by the surgeons of our own country, to whom, as we have already seen, must be assigned the honour of originating not only the idea but the practice of such operations, we find a very slender experience recorded. Mr. F. Le Gros Clark reports a very interesting case in the "Medico-Chirurgical Transactions" for the year 1845, p. 413, in which he covered in a very large antescrotal fistula by dissecting up lateral flaps, which were maintained in approximation, with considerable surfaces for adhesion, by means of leather supports. The result was most completely successful. In this case there was a perineal fistula also, which gave some little trouble, but ultimately contracted so closely that occasionally only a drop of urine might be observed to issue. The site of the operation was perfectly sound, and the patient recovered the healthy exercise of the urinating function.

Since this time, several operations have been successfully practised in accordance with the methods illustrated, and apparently there is little room left now for any material alteration in the practice thus developed. A useful means which has within the last few years been added to the therapeutical resources against those few examples of fistula, in the treatment of which the actual cautery is applicable, is the galvanic apparatus originated by my colleague, Mr. John Marshall, of University College Hospital. The advantage of thus employing a galvanic current consists in the power which the apparatus possesses to maintain in the cauterizing wire an exceedingly high temperature, nearly that of white heat, during all the time required for the process of application. By the ordinary mode of heating an instrument in a charcoal-fire or gas-jet, the temperature necessarily begins to diminish rapidly before the application to the diseased part can be made, and sometimes several repetitions of the heating process may be necessary. The galvanic cauterizing instrument, on the contrary, can be applied and adjusted while cold, and consequently with care and deliberation, and while *in situ* the current can be transmitted through it and the wire heated for any indefinite period of time. Another circumstance adds to the utility of the method in some cases—viz., the illuminating as well as heating power of the current. In passing the heated wire to the bottom of a deep sinus, a clear view of the parts around is easily obtained, the occasional advantage of which may be readily understood.

The result of the foregoing observations on fistulous openings into the male urethra warrant, I think, the following conclusions as the legitimate deductions from the data we possess:—

1. That simple urinary fistula in the scrotum or perinæum resulting from the strictured urethra, does, in a large majority of cases, close and heal when the stricture has been adequately dilated.

2. That when it is necessary to treat the stricture by external division, fistulous passages should be included, if possible, in the perineal incision when they usually heal readily and permanently.

3. That there are exceptional cases in which the result does not occur until the constitutional state of the patient is improved, and some stimulating application has been made to the sinus.

4. That a very small opening into any part of the urethra, occasioned by loss of substance, either through ulceration, sloughing, or mechanical injury, may frequently be closed by producing contraction in its parietes, by applying to them some strong chemical irritant, or the actual cautery.

5. That when there exists anterior to the scrotum an opening sufficiently large to admit—say, a full-sized catheter, its closure may generally be best effected by the revival of its edges, and the adaptation of a flap, by displacement of the skin of the scrotum.

6. That in such case it is necessary to provide for the removal of the urine from the bladder, as far as possible, without permitting its flow through the urethra, either by maintaining a catheter there for some days, or more effectually, by carefully passing one three or four times in the twenty-four hours, and removing it as soon as the urine is withdrawn.

7. That when an antescrotal opening is large, and a considerable portion of the urethra is exposed, it may be treated by the plastic operation already referred to; but the process will generally be less tedious and more complete in its results, if the urine is diverted through a small opening previously made in the perinæum; the necessity of this opening increasing in proportion to the magnitude of the original one.

8. That when an opening occasioned by loss of substance exists in the perinæum, which the actual cautery is inadequate to close, some plastic operation adapted to the special circumstances of the case may be resorted to, with some prospect of success; provided that unremitting attention be paid to the withdrawal of the urine from the bladder without disturbing the wound, failing in which no good result can be anticipated.

Wimpole-street, Cavendish-square, 1854.

ON TÆNIA: SOME MODES OF ITS PROPAGATION AND TREATMENT.

By W. HUGHES WILLISHIRE, M.D.,

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THE intention of the present paper is to continue some observations, previously commenced, connected with the propagation and treatment of certain of the human *entozoa*, the former of which observations were published in THE LANCET early last year in the shape of a clinical lecture, which was delivered at the hospital. Reference

to them will show that I there sought to illustrate the doctrines of Von Siebold, Küchenmeister, Leuckart, and others, who affirm that the *cystoid*, *cestoid*, and *nematoid* (?) entozoa are not distinct and specific creatures, as it were, in themselves, but rather different stages of the progressive development of certain fundamental organisms; a cestoid entozoon, for instance, being but a higher grade in the morphosis of some cystoid one which is the parasite of a different body. I also remarked that the late investigations of some German inquirers led to the very probable idea that *Tænia solium* of man had its protoplast in the *Cysticercus cellulosæ* of some of the lower animals, particularly of the pig. As a corollary of these and correlated doctrines (unnecessary here again to refer to), I would now offer some illustration in support of the opinion that *one chief* means by which the human body becomes subject to the parasitic presence of the common tapeworm is through the employment of raw, or underdone, or imperfectly-cooked flesh as nutriment; and that though the flesh of the pig, in particular, thus employed, is perhaps more likely to produce the effect in question, yet, practically, raw or underdone beef and mutton operate more extensively, in consequence of their wider use. Such flesh, it is of course here assumed, contains the cystoid entozoon, the *cysticercus cellulosæ*, which undergoes its higher metamorphosis in the body of the person using such flesh as food. It is not meant to be maintained that such is the only way in which the propagation of tænia is carried on, or that where this has been even in operation it has not needed the combination of other factors in the causation as well. It is to my mind, however, one causative element of considerable influence and extent, and one concerning which I now proceed to offer a few illustrations, drawn from the experience and records of others, as well as from what has happened to myself. In the first place, however, I would recall to mind the following experiment of Küchenmeister as the clue to a right interpretation of the aim of the few illustrations I have been enabled to collect together. A criminal being condemned to death, Küchenmeister obtained permission to introduce ova into his food, at periods varying from 130 to 12 hours before execution. He managed to give this felon, at his meals, a number of *cysticerci* got from the intestines of pigs and rabbits. They were partly disguised by their resemblance to the grains of rice in warm rice soup, partly by their likeness to the small bits of paste in a kind of vermicelli gravy, and partly by their being substituted for the small lumps of fat in black-puddings. On examining the body of this criminal forty-eight hours after decapitation, ten young tape-worms were found attached to the small intestine by their hooks and suckers.

From the experience of others I glean the following illustrations: Theophrastus of Eresus has recorded the observation that scarcely any persons at Athens suffered from tape-worm, except the athletes, and they were nourished in particular

upon the flesh of the pig. Wawruch and, still later, Bamberger, have asserted, on the other hand, that the Israelites are remarkably exempt from the parasite. In 206 cases of tænia, only three happened to be Jews, and they confessed to Wawruch that they had not rigidly abstained from the use of pork. The same investigator came to the conclusion that those most liable to be infested were butchers, sausage-makers, and cooks, an opinion with which the experience of Mason Good, I believe, coincided. But at any rate Küchenmeister has very lately maintained the same fact, and has entered into certain explanations why not only butchers but *their families* are thus liable to be infected. The constantly handling the raw meat, the practice of putting a knife between their lips and teeth, their taking their meals with unwashed hands, &c., are some of these reasons; such practices showing how easily fresh uncooked *cysticerci* may obtain entrance into the alimentary passage of man from the flesh of the inferior animals.

According to the published statements of the well-known travellers, Bruce, Rüppel, and Pruner, nowhere is the human body so frequently and extensively infested by the entozoon in question as in Abyssinia, where the use of raw meat, particularly amongst the poorer classes, is almost universal. People not infested are looked upon as exceptions almost to a rule, and strangers who comply with the usages of the country are sure to be sooner or later attacked. Godingus, who wrote a book in 1615, *De Abyssinorum rebus*, alludes to a tree (probably our present kosso) as being very efficacious against worms produced by the use of raw meat; whilst a recent writer makes mention of certain "*Patres Carthusiani Abyssinorum*," rigid and systematic fasters and abstainers, who escape the attacks of the parasite in question. A few years since, Beer, of Berlin, introduced the use of finely-chopped raw meat as a tonic diet in the cachexias of children. It gradually became rather extensively employed on the Continent, and I introduced it myself at the Royal Infirmary for Children. I was arrested, however, in continuing to recommend it (substituting prepared bullock's blood, as advised by V. Mauthner), on account of Dr. Weisse, of St. Petersburg, publishing in the *Journal für Kinderkrankheiten*, an account of three children of between one and two years of age becoming attacked by tape-worm, after having been fed upon raw meat for periods of time varying from two months to a year, *tænia solium* being rare at St. Petersburg, and in neither instance had any of the children's relatives suffered from the entozoon. In a paper by Dr. Anderson (of the 43rd Regt. of Light Infantry), published in the *Indian Annals of Medical Science* for October, 1852, 95 cases of tape-worm are alluded to, and in connexion with which the following observations occur:

"Eighty-six were European soldiers, eight were Mussulman natives, and one a Hindu of the metiter or lower class. . . The food of Europeans in India is of course much the same as in Britain, consist-

ing, amongst other articles, of 1 lb. of animal food (beef or mutton) per diem. The eight Mussulmans belong to the class of natives whose religion does not interfere with their diet, and whose habits, less frugal than those of the Hindu, do not prevent them indulging freely in all varieties of animal food, except pork. The solitary Hindu patient is one of a class whose degraded position allows them to partake of any substance, animal or vegetable, not excepting animals that have died of disease. From these circumstances it seems that varieties in modes of life cause material differences in the liability to the tænia; that amongst those who indulge largely and daily in animal food tape-worm is common; that amongst those who, where their means admit of it, partake of flesh in small quantities, tape-worm occurs in but small proportion, and that as far as my experience yet goes, amongst several native regiments, Hindu sepoys and servants, whose food is only vegetable and farinaceous, the tape-worm is unknown."

Dr. Wood, of Philadelphia, has remarked upon the comparative rarity of tape-worm amongst the natives of the United States; whilst very lately I read that Dr. Fleming, of the Queen's University, Ireland, had been informed that in Cincinnati, the largest pork market in the States, the "measle" (or cysticercus) is unknown. Küchenmeister affirms Poland, Hungary, England, Pomerania, and Thuringia, to be the chief localities of tænia solium, as also that it is there where the use of pig's flesh is by far the most extensive. While the occurrence of tænia is said to be very common in Germany, where the practice of eating raw ham is very far from unusual, in Scotland, according to Dr. Gairdner, tape-worm is very rare compared with some European states, and rare as compared with some parts of England. This Dr. Gairdner attributes to the small proportion of animal food, and especially of ill-cooked animal food, used there by the labouring classes. Further, Dr. Crichton has drawn attention to the common practice amongst the Lancashire operatives of eating raw meat, and has recorded the following very pertinent illustration of its results:—

"In December, 1853, I was consulted by T. B——, aged forty, a calico-printer, on account of tape-worm, with which he had been troubled for six or seven years. On inquiring as to what means he had employed for his relief, I was much struck at the long list of medical practitioners under whose care he had been, but without obtaining respite for any length of time from his distressing complaint. He stated that the remedies employed had generally been successful in bringing away portions of the parasite, but that after a greater or less time, never exceeding a few weeks, his symptoms—itching, pain, &c.—had invariably returned. The observations of Dr. Nelson on the development of tænia solium immediately occurred to me, and led me to ask him whether he was in the habit of eating animal food uncooked? After some hesitation, he admitted that he had acquired the practice in his native county, Lancashire, and that since his removal from it to Derby-

shire, his complaint had increased much, owing, he thought, to his not having fish so frequently as before. . . . Although he used both beef and mutton, he preferred the latter, and used more of it in a raw state. When questioned as to the frequency of his taking it uncooked, he allowed that he did so at least once a week. . . . I enjoined him, if he wished to get rid of his tedious ailment, to avoid raw flesh in future. . . . On inquiry after him during the summer of 1854, I was glad to find him nearly free of his complaint, and during the present month (May, 1855) he states that he has been completely well since the end of last summer, not having seen any portions of the worm since the beginning of September, and that he has entirely abandoned the practice of eating uncooked animal food."

During the early part of last year, a girl entered the Royal Infirmary of Edinburgh, under the care of Dr. Gairdner, to be treated for tape-worm, nine yards of which were afterwards expelled under the influence of a particular remedy. On inquiry, the patient admitted that she had been in the habit of eating quantities of raw pork and butchers' meat generally. This was from a peculiar liking or inclination of her own, and was not a habit contracted in consequence of the example of others. In other respects her diet had been similar to that generally in use in her station of life in Scotland.

I shall now make reference to one or two cases coming within range of my own experience.

July, 1856.—C. F——, a young man, seventeen years of age, applied at the hospital to be relieved of tape-worm. He owns to eating raw meat, but says his friends try to prevent him eating it, so that sometimes he only got a piece the size of an inch or so about once a month, sometimes a little oftener. He had the "long round worm" (*acaris lumbricoides*) when younger, and in Devonshire, but did not then eat raw meat. His cooked meat, he states, is generally underdone. The remedy prescribed brought away several yards of tænia.

August, 1856.—M. C——, a female, aged twenty-six, applied as an out-patient at the hospital, to be treated for tape-worm. Has suffered from it for five years; almost every day bits come away. Once nearly twenty yards passed from her body. Sometimes the worm comes away as she sits, and will do so for half an hour together. Being ashamed of it, she has not liked to tell any one what she suffers from. Is reduced, as she expresses it, "almost to a skeleton." Has dragging pains in the stomach, bad appetite, and is very pale. The bowels are at present relaxed, "blood and jelly-like stuff" passing from her. Catamenia irregular. Admits that she occasionally eats a bit of raw beef, raw steak meat, when she buys it; is rather fond of raw meat—indeed, likes to eat it; her cooked meat, too, is always underdone. Does not like, nor does she have, much pork. The remedy prescribed caused a long tænia to be evacuated.

November, 1856.—C. F——, the male patient

(above alluded to), and M. C—, the female one, have, with a strange coincidence, returned to the hospital during the same month, to be again relieved from tape-worm. The male patient confesses to having eaten raw meat again, and says he "could not help it." The woman does not admit she has recurred to the like and her former practice. The same treatment adopted as before relieved both patients of their parasitic appendages.

December, 1856.—M. R—, a girl, thirteen years of age, living in Lambeth, applied as an out-patient, to be relieved of tape-worm. Has suffered from it for four years, and it has come away one yard long together. Is troubled with sickness after meals. On being questioned, confesses that she eats a good deal of raw steak meat, being very fond of it. Her cooked meat is always underdone. She eats pork now and then, but not uncooked nor underdone. Her mother suffers from worms, but she does not know that her mother eats raw meat. The remedy prescribed brought away three yards of tænia.

January, 1857.—J. M'H—, a boy, seven years of age, was brought by his mother to the hospital to be relieved of tape-worm. He had a cough at the beginning of last summer, for which she gave him some "cough stuff," which brought away many joints of a tape-worm. Did nothing more, but finding some more joints on Sunday last, she thought she would bring him to the hospital. He is always picking his nose, sleeps restlessly, and has got very thin. He does not eat raw meat to her knowledge, but he has his meat always very underdone, as she thinks it is more nutritious with the gravy in it. Takes pork but very rarely, and he does not have much of vegetables. She had ascarides when young, but not tape-worm, nor have any of her family. The remedy prescribed brought away above two yards of tape-worm.

John G—, aged fifty-six, an attendant upon insane persons, was brought to me by one of the students of the Charing-cross Hospital, on the 19th of February last, to be treated for tape-worm. Stated that he first observed portions of a worm eight years ago, for a dose of medicine to remove the remainder of which he paid a sovereign to a "worm doctor," and which dose brought away the worm in large quantity. Two months after this, however, more portions of worm appeared, and he has been troubled with the disease ever since. He now complains of hunger, disturbed rest, the bowels being moved once a day. He confesses he is very fond of raw meat of any kind almost, except of pork and veal. Has always been fond of raw meat in preference to its being dressed, and has eaten as much as a quarter of a pound of raw beef-steak at a time. Has occasionally eaten raw ham, and this lately. His cooked meat is always underdone, but he does not consume much cooked pork. He would say that he had not observed any worm pass before the time he took to eating raw meat. He has been in Scotland and Wales, and does not know that his father or mother suf-

fered from tape-worm. He was ordered the usual treatment, but the result has not as yet been communicated to me.

In reference to the *treatment* of tape worm, I would first remark, that strict inquiry must be made relative to the diet of the patient. In doing so, it is most essential, first, to insist upon the perfect cookery of all animal food consumed; secondly, the avoidance of the frequent use of the flesh of the pig; and, thirdly, the rather full admixture of condiments, such as salt, pepper, mustard, spices, &c., with the general diet. It is known to me from experience, that a person frequently troubled with intestinal entozoa ceased to be so when he continued occasionally taking good curry for his dinner; and I need scarcely do more than recall to mind the asserted effects of the criminal law of those countries which forbade the least admixture of salt with the diet of the felon, and who thus, in addition to his other punishment, suffered the torture of parasitic entozoa.

Attention may also be directed to the fact of the *Bothriocephalus latus* being, according to Huss and Wretholm, quite endemic on the shores at the head of the Gulf of Bothnia from Tornea to Pitea, as likewise to the not improbable opinion of Waldenström and others, that the propagation of this human entozoon has some specific relations to ichthyophagic habits. Now, the water of the Baltic in general, and that of the Gulf of Bothnia in particular, are characterized by their small amount of saline constituents. Three pounds of water taken from the North Sea, contain 747 grains of salt; but the same quantity taken in winter from the Baltic, does not yield more than 389 grains, whilst in summer it is probable that not more than half this quantity even could be obtained from the water of its Bothnian part. Further, it is remarkable that where this parasite occurs inland, it does so in such a country as Switzerland—a place with numerous fresh-water lakes. It may therefore be presumed, as a late writer in the "Medico-Chirurgical Review" has remarked, that a fresh-water fish, or at least a fresh-water marine animal, will afterwards be found to be the matrix of one of this entozoon's previous stages of development.

The value of these and of other condimentary agents, as prophylactics against the production of intestinal entozoa generally, is to be explained, I believe, by their helping to maintain the tone of the alimentary canal and its functions under circumstances which would otherwise depress them to that point which is one of the most favourable conditions for assisting the progressive metamorphosis of intestinal parasites. These circumstances, amongst others, are low, damp, malarious residences, diminished intensity of the solar light, and great uniformity of insipid diet, &c. &c. Dr. Copland remarks, when alluding to certain forms of tropical vegetation, "The low grounds on which these are produced abound with deleterious miasms, and the stagnant water which there often serves for the necessities of life contains the ova of insects and animalculæ. While the former

occasions ague and remittent, the latter gives rise to disease of the digestive canal and to the generation of worms.....In the above localities grow the different species of the *capsicum*—the principal condiment employed by the natives, and these are also the chief prophylactics and remedies for their constitutions against the diseases now alluded to.* These views, in part, I should support, as they explain the free use of "peppers," as they are called, (the large pickled pod of the *capsicum*.) in some warm localities. I have myself witnessed children on the coast of Africa consume these fiery fruits with the utmost *gusto*, and which practice appeared to me, before I was initiated, but an unwitting experiment to take the skin off their mouth. In spite of all prophylactic care, however, *tænia* will prevail, and the question, then, is, how to expel the entozoon with most surety, celerity, and with least inconvenience to the patient. This has long been a question for consideration, even from the days of Dioscorides, and concerning which the public as well as the profession have alike busied themselves. The result has been that a legion of particular drugs and pharmaceuticals have at various times been proposed, and for a time each has been regarded as the remedy *par excellence*. To allude to them is quite unnecessary, except to call to mind those which in very modern times have been regarded most favourably. These have been, the rectified oil distilled from turpentine, the decoction of the root of the *Punica granata* or pomegranate, and the infusion of the flowers of the *Brayeria anthelmintica*, or Abyssinian Kosso. That all three are useful there cannot be a doubt; but the first occasionally produces irritant symptoms referable to the urino-genitary and nervous apparatus, particularly in full habits and plethoric people; the second is not always readily procurable in a sufficiently fresh condition for use; and the third has to be taken in a repulsively-bulky amount, at one time was exceedingly dear, and is always liable to being either stale or adulterated. Valuable, too, as these vermifuges are, there yet hangs about their use a considerable degree of uncertainty; so that to possess an agent less nauseous and irritant than turpentine, more sure than pomegranate, and less bulky and less expensive than Kosso, is no doubt a great advantage. That we do possess such a drug, I am decidedly of opinion, as also that the three favourites I have just named will be gradually, but surely, displaced by it, except in out-of-the-way and country places, where a command of drugs is not at hand, and where *turpentine*, of course, will continue to be employed. The drug to which I allude is an oleo-resin prepared from the root-stock and frond bases of the *Lastræa filix mas*, or male fern. The plant itself is, indeed, no new member of the *materia medica*, as even Theophrastus, Dioscorides, Pliny, and Galen, and old Gerhard, Andry, and Marchant in later days, have commended it. But from its having

been used "in the rough," as it were, from spoiled, useless, or inert samples having been employed, and from its being often combined with other agents, it got, on the one hand, to be neglected as uncertain, and on the other hand, to be considered as having obtained a credit really due to the other ingredients by which a dose of it had been followed, or with which it had been combined.

In 1776, however, Madame Nuffer (the widow of a Swiss surgeon), of Murten, in Switzerland, obtained great repute from possessing a secret remedy for the ejection of tape-worm. The secret was at length purchased by the King of France for between £700 and £800 of our money; and when it was afterwards made public, it appeared that in rather a complex piece of preparation and purgation the powder of the male fern root was the *pièce de resistance*. Once more the fame of the remedy arose, but only, as it happened, to be again silenced, for after some considerable failures, it was deemed of uncertain value, and what virtue the method did possess was regarded as rather due to the mixture of calomel, gamboge, and scammony, by which the dose of fern root was followed, and which mixture had long been considered a powerful vermifuge, having received the significant title of the *pulvis trium diabolorum*, or the powder of the three devils.

Though having thus lost its *prestige*, practitioners remembered that this agent, "fern root," had been famous from the earlier days of medicine, that Madame Nuffer's remedy proved undoubtedly very frequently successful, and that hence the failures with it were perhaps due to untoward circumstances, capable of being, though not yet, guarded against. At length a physician of Geneva, M. Peschier, to insure as much certainty and concentration of strength as possible, prepared an "oleo-resin of male fern" by digesting the frond buds in sulphuric ether. This was used successively by the producer, by Hufeland, Ebers, Radius, Schönmann, Salzmann, Tott, Fosbrooke, and others, and the collective judgment was, that this oleo-resin exceeded all other anthelmintics in rapidity, in certainty, and in comfort to the patient. Radius, however, still thought that the *head* of the worm was more surely to be found after the employment of pomegranate; Bremser regarded it as a successful agent against the *tænia* (*Bothriocephalus*) *lata*, but not against *tænia solium*; whilst Mayor asserted the *tænia lata* to be expelled by the oleo-resin, but that *tænia solium* only yielded to the most fresh powdered fern root. From 1833 to 1835, attention was strongly directed to the value of this oleo-resin, in our own country, by Dr. Christison and Dr. Fosbrooke; but even as late as 1850, Dr. Pereira continued to write: "Numerous testimonies of its efficacy have been published. I have tried it in several cases of tape-worm, but without success." It was not until about five or six years back, when renewed accounts of its power and trustworthiness were published in some

* "Climate," in *Cyclopædia*, section 30.

Edinburgh journals, that it became introduced into more general employment. Since then, Drs. Christison and Gull, in particular, have amply illustrated the power and trustworthiness of the drug. According to the former, his "experience of the male shield fern corresponds precisely with the much more extended observations of Peschier, at Geneva, more than a quarter of a century ago;" whilst the latter states that the drug had been given in nearly 200 cases of tape-worm at Guy's Hospital, and that it was esteemed as the most convenient and effective remedy we have hitherto had. In confirmation of these encomiums, I can say, that having employed it since 1853, I have found it to be, on the whole, by far the most available of all the remedies proposed against tænia. It may be given to very young children; I have given it in half-drachm doses to a child of four years of age; whilst Dr. Gull has prescribed it to a boy two years old in doses of a drachm and a half, without injurious effects. I have not myself given it to a pregnant woman, as, according to Salzmann, it possesses emmenagogue effects; how far this is the case, I know not, however. I generally order the "oleo-resin" in drachm doses, with an equal amount of sulphuric ether rubbed up with an ounce of mucilage. This is taken at five or six in the morning, on an empty stomach, and is followed, in about five hours, by an ounce of castor oil. The introducer (Peschier) regarded half a drachm of the oleo-resin as equal to three drachms of the "powder" in effect. I have generally found that in about four or five hours after the first dose the worm has been expelled, just before the time, indeed, when the castor oil is about to be taken. I have, however, known the "oleo-resin" to expel the worm within one hour after its reception into the stomach, and I have also known it to remain (in the case of a girl thirteen years of age) for a day and a half before operating, then to produce a motion, in which the worm was expelled. This girl made no complaint during the interval. Sometimes sickness is complained of, often not, as is also the case as respects the nauseousness of the drug. The latter does not seem to be endowed with any great amount of purgative power; frequently only one motion would be produced, were it not for the following dose of castor oil. The true value of the oleo-resin appears in its killing and dislodging power over the cestoid entozoon, its effects on the supporting organism being very slight comparatively.

The great test, of course, of the virtue of a drug against tænia is the fact of the *head* (or at any rate what is called the head) of the worm being expelled by it; for if this is not effected, however long may be the part expelled, reproduction of an entire length will soon again recur. But the difficulty is to know whether the complete expulsion has really taken place? The mere fact of a patient at an hospital not being able to produce the head is no proof it has not been eliminated, even after he has been told how to manage to look for it, and after it has been carefully

described to him, so that he may know it when he sees it. If I were to judge of the value of the oleo-resin of the fern merely from the number of heads *I have had brought to me* after its employment, I certainly could form no very exalted opinion of its virtues. But judging from the constant ejection of a lengthened piece, the close approach made to the head, as shown by the very narrow portion which is usually presented to me, and the story told by the patients as to their mode of search and discovery, I am led to think that the head is far more frequently dislodged and ejected than might be otherwise supposed. Further, it should be borne in mind that where the patients have been under the immediate observation of the physician as in-patients instead of as out-patients of an hospital, and where the nurse has been rewarded for her trouble in procuring the delicate filiform termination, it has been far more surely produced. "In eight out of twenty cases," says Dr. Gull, "it has been brought; in six of these under care in the hospital, the nurse was offered a premium for every head she found, and four out of the six were so obtained." After the expulsion of the worm I generally put the patient upon a course of the tincture of the sesquichloride of iron in infusion of quassia.

The identification of the particular plant thus serviceable from time immemorial unto the present in dislodging "tænia" will be obtained by bearing in mind its various synonymical designations. It is the *ῥίσις* of Theophrastus and of Dioscorides, and of the modern Greek Pharmacopœia of 1837, and also of Pliny; the *βλαπτικὸν* and *ποδωπύριον* of other Greek writers; the *Polypodium filix mas* of Fuchs and Linnæus; the *Aspidium filix mas* of Swartz; the *Nephrodium filix mas* of Richard, and the *Lastrea filix mas* of Bory and of Presl. It is the "common male shield fern" of the *vernacular*, and is met with almost everywhere in woods, dells, and on shady banks in Great Britain, and is a native of other parts of Europe, and of Asia, of the North of Africa, and of the United States.

The oleo-resin is prepared from what is called "fern root" by the herbalists. This "fern root" is made up of the foot-stalks of the fronds, the true rhizoma, and the scales and radicles, clothing them, and connected thereto. Only fresh portions of this so-called "fern-root" should be employed, but, if fresh, the plant appears to possess its virtues all the year through. These fresh portions are cut in pieces, and dried in a hot-press at a temperature not higher than 140° Fahr. They are then coarsely triturated, packed loosely in a percolator, and exhausted by sulphuric ether in the way of displacement. The greater part of the ether should then be distilled off, and what is left expelled by exposure in an open basin of glass or porcelain to a vapour-bath temperature for a few minutes. An inferior kind (according to the *Edinburgh Monthly Journal*, June, 1852, from which I now quote) is to be found in the market, from which the ether has not been sufficiently or properly removed. The drug thus prepared is a

dark-green, sluggish, syrupy oleo-resin, with a peculiar resinous smell and nasty resinous taste, the chemical composition of which is given by Luck in the "Annalen der Chemie und Pharmacie" for 1845. "Under the microscope it is seen," according to Dr. Gull, "to consist of a congeries of crystalline particles in the form of spiculæ and rhombic plates, scattered or variously aggregated into stellar masses."

Before concluding this part of the subject, I may mention, that during the last few months some attention has been directed in Germany to a new and South African remedy for tape-worm, and for which an absurdly high price has been asked. It has still more lately been discovered that this new drug, called Panna, or Radix panna is identical with a root called Inkomancomo, sent from Port Natal as a famous remedy for tænia, greatly employed by the Zulu Kaffirs, and which was laid before the Assembly of Apothecaries at Hamburg in 1851. Another and chief point of interest to us at present is that this new remedy turns out to be the rhizoma of a fern, or as Martius states, of the *Aspidium athamanticum* of Kunze. This *Aspidium*, again, in the opinion of some good filicologists—Mr. Thomas Moore, e.g.—is more properly a *Lastrea*, the *Lastrea athamantica*, our own remedy being, it will be recollected, *Lastrea filix mas*. According to Dr. Callaway, of Natal, the dried rhizoma of the fern, having been ground to powder, is administered by the Kaffirs in milk or milk-and-water, and taken fasting. Sometimes this mixture is allowed to ferment. At a late meeting of the Pharmaceutical Society, Mr. Daniel Hanbury communicated these and other interesting particulars from Martius, of Erlangen, relative to this new remedy for tapeworm. In the discussion which followed, Mr. Alchin is reported, in the *Pharmaceutical Journal*, to have noticed the fact that the plant described by Dr. Martius belonged to the same genus as the male fern, which it appeared to resemble in its medicinal effects. "He thought it interesting that the two substances should have been employed for the same purpose in different parts of the world."

Medical Societies.

MEDICAL SOCIETY OF LONDON.

MAY—JUNE.

MR. HIRD, PRESIDENT.

MR. I. B. BROWN read a paper

ON PROLAPUS OF THE UTERUS, AND ITS CURE BY OPERATION.

The case was that of a woman, forty-five years of age, and the mother of several children. Upon examination he found that the perinæum had been

partially ruptured, and that three-fourths of it had healed up again, leaving about an inch of the fourchette still absent. About five years ago she began to suffer from prolapsus of the uterus, which gradually increased, and at last rendered her quite incapable of following her usual employment of field labour. The constant and unremitting pain completely destroyed her health, and she became a perfect wreck of her former self. Her hips and thighs were in a state of excoriation from the habitual discharge. The uterus protruded completely through the external parts to the size of a six-months' fœtal head. She was desirous and willing to undergo any operation which would give her relief, as her life was a perfect misery. He therefore performed on her his usual operation, which consists in paring off the mucous membrane in a horse-shoe shape from the posterior and lateral parts of the vagina, and for about an inch, and in some cases even two inches in depth, and bringing the raw surfaces in apposition, with deep quill sutures, and the edges with interrupted sutures. He also takes off a portion of mucous membrane, about an inch and a half long, and three-quarters of an inch in breadth on each side of the anterior portion of the vagina in the labia, and draws their edges together with interrupted sutures. The object of the former part of the operation being to increase the length and depth of the perinæum, thereby contracting the orifice and calibre, as well as giving increased basal support to the column of the vagina, and of the latter to contract somewhat its superior and lateral walls. The operation succeeded perfectly, and she was discharged quite cured in five weeks. He has since heard from the lady who sent her, that she is as well as ever she was in her life, and following all her usual occupations, both in and out of doors with perfect comfort and ease. He had brought this case under notice, more particularly because he had observed in THE LANCET of that day that an eminent surgeon of one of the London hospitals has recently performed it, and in his observations appeared to claim the operation for another gentleman, whereas he (Mr. Brown) was entitled to the credit of having been the first to perform it in this country, his example having been followed by many. The present was his seventieth case. Mr. Brown observed that very few cases required so complete a closure of the vagina as appeared to have been done in two cases to which he alluded, as it renders it impossible for the woman again to become pregnant, or to be delivered, whilst by performing it on the plan he suggested, both had taken place without detriment.

Mr. H. SMITH remarked that Mr. Fergusson had had no wish in his remarks to detract from the merit of any one. Dr. Savage's name was mentioned as he was present.

Mr. HIRD inquired whether the operation would be advisable in a woman not passed child-bearing.

Mr. BROWN did not contract the vagina to such an extent as did Mr. Fergusson. It was not necessary. He (Mr. Brown) had had cases in which pregnancy had occurred after the operation, and

delivery effected without injury to the new perineum.

Mr. CANTON introduced to the notice of the Society three youths, of the respective ages of eleven, fourteen, and twenty, with well-marked

ARCUS SENILIS.

The cases were peculiar in respect to the question of their hereditary character. The father and mother had the arcus at the respective ages of fifty-three and forty-nine.

Mr. DE MÉRIC read a paper on

CONDYLOMATA.

The author sought to establish, first, that the so-called condylomata belong to the class of secondary, and not primary, symptoms; secondly, that they are therefore neither physiologically nor artificially contagious; thirdly, that the treatment adopted by him is effectual, and worthy of imitation. Mr. de Méric discarded altogether the word *condyloma*, and showed that it would be advantageous to adopt the term *mucocutaneous papules* to designate the clustered or disseminated tumours which appear about the vulva and anus in secondary syphilis; he would call *mucous* papules the same growths on purely mucous membranes, and *mucous patches* when the epithelium is destroyed. The first and second of the three propositions were supported by arguments based on facts; and the treatment was shown to have been successful in numerous cases. It consists in the administration of iodide of mercury, emollients and cleanliness locally, followed by a lotion of hypochlorite of soda, and dusting with calomel. The author is now giving chlorate of potash along with the mercury, to forestall any unpleasant effects of the metal. A careful distinction was drawn between mucocutaneous papules and mere non-syphilitic vegetations or warts; and Mr. de Méric concluded by reading short notes of cases treated at the Royal Free Hospital, accompanied by some good drawings of the pathological appearances.

Mr. HENRY LEE was inclined to agree in the main with the proposition of the author, that all condylomata were secondary; but cases sometimes occurred in which no other secondary symptoms presented themselves, and the condylomata went away by simple local treatment. Mr. de Méric had said that one of the proofs of the secondary character of these affections consisted in the fact that they could not be inoculated. He (Mr. Lee), however, thought this test a fallacious one, inasmuch as the same quantity of fluid that would inoculate well whilst the sore secreted pus, would fail to do so in most instances when the sore had become of the adhesive kind. But it must be remembered that sores of the adhesive kind, though not inoculable by the lancet, might be so by other means. He had seen such cases. Mr. de Méric's argument, therefore, on this point, in favour of condylomata being of a secondary character, was incomplete. He (Mr. Lee) had found this affection best treated by calomel fumigations.

Mr. HANCOCK differed from Mr. de Méric as to the capability of propagating syphilis from secondary symptoms. He was sure he had seen the disease so propagated. He had seen it communicated also from the induration remaining after chancre, where there was no sore or abrasion whatever. He would ask if inoculation would succeed in a system saturated by syphilis? He admitted that condylomata were always of a secondary character, and he agreed with the treatment recommended in the paper. If an individual was under the influence of the virus of syphilis, it was not necessary for him to have an external sore to propagate the disease.

Mr. DENDY regarded the doctrine enunciated by Mr. Hancock as paradoxical. The disease, according to such a theory, could be communicated by a shake of the hand. He thought, in opposition to Mr. Lee, that if the disease were inoculable at all, the same result would be obtained whether the matter were inserted by a lancet or by any other means.

Dr. GIBBS had seen a case in which numerous condylomata surrounding the anus had been shaved off by Mr. Curling, at the London Hospital, no constitutional treatment being adopted.

Mr. Henry LEE inquired if, in those cases in which the pus had been examined by the microscope previous to inoculation, acetic acid had been added previous to testing it?

Mr. DE MÉRIC stated, in reply, that he was much pleased that Mr. Lee, whose opinions were entitled to so much attention, had taken a share in the discussion. Mr. Lee, he found, was inclined to consider mucocutaneous papules as secondary symptoms; but he had some doubts, because some papules disappeared rapidly. This latter circumstance is, however, of slender importance, as regards distinction between primary and secondary symptoms, as we all know that secondary eruptions will often disappear very rapidly without any treatment at all. Mr. de Méric thought that Mr. Lee's theory of adhesive and purulent sores was entitled to every respect; he was not aware, however, that in his paper he had made a confusion between papules and pustules. When he spoke of pus connected with papules, he alluded to that secretion as the result of a highly-inflamed and ulcerated state of the papules, which state was often brought on by much walking combined with neglect. Mr. Lee and Mr. Hancock, arguing from cases they had seen, both believed that secondary syphilis could be communicated to a female by a man whose sexual organ presented only an indurated cicatrix from chancre. He (Mr. de Méric) thought this view inadmissible, because complete reliance could never be placed on cases where patients have an interest in concealing circumstances which might reflect unfavourably upon themselves, and because the mechanism of infection by an unbroken surface is contrary to all known pathological phenomena. Mr. Hancock, on considering the matter, would perhaps be led to concede that the fact of mercury being easily rubbed into the system was not sufficient to

prove that secondary exudations may also be introduced into the economy by friction. Mr. Hancock's question as to the effects of the inoculation with the matter secreted by muco-cutaneous papules, could hardly be thoroughly answered but by inoculation of the secretion upon a perfectly healthy individual. This, however, he (Mr. de Méric) was not prepared to do. He further stated that he was much indebted to Mr. Hogg both for his remarks on the paper and for the kind manner in which he had examined, in numerous instances, under the microscope, specimens of various venereal secretions taken from Mr. de Méric's cases. He hoped Mr. Hogg would continue to assist him in further investigations. As to the iodide of mercury, he was in the habit of prescribing it in pills, and the chloride of potash in solution. Mr. Dendy had, in his remarks, answered the various objections brought forward by the gentlemen who differed in opinion with the author. The latter considered that Mr. Dendy's apprehension as to the shaking of hands was not groundless, if the cicatrix theory were found correct. As to the shaving off of the muco-cutaneous papules by Mr. Curling, mentioned by Dr. Gibb, Mr. de Méric was inclined to think that Mr. Curling must have considered the growths he thus removed as mere vegetations.

MR. MOULLIN read a paper on the

NECROSIS OF CANCER, AND ITS CONSEQUENT ENUCLEATION.

The author premised by giving the history of six cases of cancer of the breast, and showing several specimens which had been enucleated by the action of the chloride of zinc. These specimens, the author stated, were positive proof of the result of a mode of proceeding which, as far as he could ascertain, was entirely new. The object proposed was not to destroy tumours piecemeal, making layer after layer slough and separate by successive applications, which are each brought into contact with an extremely irritated surface, but rather to cause the slow death of the morbid growth by causing its substance to become day by day penetrated more and more deeply by an agent which coagulates the blood in its vessels, and acts in like manner upon the living albuminous solid; and finally, when completely necrosed, to become enucleated *en masse*, as in the present instances. The principle which guides the whole proceeding is one well known and acted upon by all our best practitioners. It is to proportion the rate of our therapeutic efforts to that of the disease we are dealing with. In acute disease we must act with energy and rapidity,—in chronic, with unstained gentle perseverance. The morbid action that would be exasperated by violent measures, yields kindly to a mild influence steadily maintained. Such, the author believed, was the rationale of the treatment which he fully described in the history of the cases. Mr. Moullin stated that the essential point in his plan of proceeding was the mode in which the remedy was

used, and it was quite possible that other remedies used in the same way might produce like effect, of which we have repeated instances in medicine. The great step, however, was to gain the leading idea, the guiding principle; details are easily learnt by experience. The history of these cases furnishes us with a very good illustration of the disease in its various stages, as is seen in the out-patients' room of our metropolitan hospitals daily. No. 6, of one year's duration, was in its first and by far the most favourable stage for either plan of treatment, being about the size of a nut, perfectly movable, and rarely causing much pain. The disease, the author thought, at this stage might, with all propriety, be denominated local. No. 1, of twelve years' standing, was a very good example of the disease in its second stage; the tumour the size of an ordinary orange, of stony hardness, well defined, yet movable; pain more of a lancinating character, as if a needle were run in. Next come Cases 3 and 4, the one of two, the other of twelve years' growth, where the tumour is attached to the integuments, having that peculiar appearance previous to the commencement of ulceration, and forming the third stage. Then Cases 2 and 5, the one of twenty, the other of three years' duration, where ulceration takes place, presenting an open, excavated sore, with hardened, everted, irregular, edges, uneven base, covered with a grey slough, offensive, thin discharge, frequent losses of blood, and all the usual train of constitutional symptoms. Such was the history of the cases brought before the Society, and it was in such cases that the plan of treatment proposed would be found most advantageous. The object of this plan of treatment is not merely to destroy diseased parts, but to modify the abnormal vitality of the subjacent tissues, without which the disease will reappear. The effect of the chloride of zinc in cancerous cases has long been known to the profession, and largely used on the continent, with marked success, and in this country by Mr. Ure, who, in 1836, brought before the profession the treatment of cancer by the chloride of zinc. He says: I have no doubt that a part of its efficacy in eradicating from their ultimate ramifications cancerous tumours is to be ascribed in no small degree to the powerful action it exercises on albumen. In this way, numerous minute points, undiscoverable by the surgeon, and inaccessible to his knife, are searched out and destroyed, for when the chloride of zinc comes in contact with the morbid albumen, it gradually penetrates its substance, so as to deprive it of vitality, and to form an eschar. Without seeking to draw a comparison between the relative merits of the extirpation of cancer by surgical operation and by the necrosing agent in question, suffice it to say, that the latter never creates any serious inconvenience, while an amputation of the breast may not always have the most favourable issue. The chloride of zinc is found most useful in open or ulcerated cancers and canceroid growths generally, where the knife is utterly out of the question, also in the enuclea-

tion of tumours that are of a doubtful nature, and in secondary cancerous formations that take place after operations with the knife. In the treatment of rodent ulcer, the *noli me tangere* of some authors of which Mr. Moullin related a case (cured by him in eight weeks) of seven years' duration, which had resisted various other plans of treatment, the author stated that two important questions presented themselves for the consideration of the profession. The first is, the possibility of the enucleation of tumours, malignant or benign, by the action of chloride of zinc. This first point he thought was satisfactorily proved by placing facts before his professional brethren, and would leave it to them to declare whether they were satisfied with the result. As to the second point—viz., the liability and probability of a return of disease after enucleation of the tumour, this nothing but time and experience could decide.

Dr. MACKENZIE remarked that the paper could not decide the respective value of the local treatment of cancer by enucleation or the knife, inasmuch as the cases related were too recent on which to form any opinion. It was still a question how far the removal of the local disease did away with the chances of return. Cases had constantly occurred in which the removal of the local disease was followed by internal cancerous affections, and had destroyed the patients. He related a case in point.

Mr. BARWELL said that it was questionable whether any local treatment would so modify the constitutional taint as to prevent a recurrence of the disease. He was surprised that that there had been so little pain in Mr. Moullin's cases. In 1824, M. Cancoin had used the arsenical paste in some cases with a fatal result. He then experimented with seventeen different kinds of escharotics, and had found that of these nitric acid was the least painful in its application, whilst chloride of zinc was the fourteenth on the list. He (Mr. Barwell) had used the tannic acid in some cases of cancer. To be of service, it was necessary that there should be much care in its application. Slits must be made in the slough to enable the tannic acid to permeate through it. Applied in this way it was productive of little pain.

Mr. JABEZ HOGG did not feel satisfied with the evidence produced by the author as to the character of the tumours which had been enucleated by him. In the absence of a microscopic examination, the diagnosis must necessarily be imperfect. Numbers of cases were called cancer, treated as such, and said to be cured, which were in reality benign tumours. He related a case which had been sent up to him from the country, of supposed cancer of the tongue. The disease, however, was found to be caused by pressure from decayed teeth. The teeth were removed, tannic acid, under the advice of Mr. Barwell, applied to the so-called cancer, which was perfectly cured in a fortnight.

Mr. BIRKETT had been quite disappointed in the paper, which contained nothing new. Escharotics had been extensively employed, to prevent

the natural alarm which patients had on the use of the knife. With respect to true cancer, no case had been recorded as successful after removal which was not eventually followed by death from secondary deposits in some other organs. It was said in favour of escharotics that they had so much influence on the surrounding tissues as to prevent the recurrence of the disease, but this was a mere assertion, and had not a tittle of proof to rest upon. The question at issue was clearly "caustic *versus* knife;" and he contended, in opposition to the statement of the employers of caustic, that the knife was not uncertain, but that the local disease could be more safely and readily extirpated by it than by caustic. He had tried the caustic; it had been also extensively used by Key, Callaway, and Brodie. Mr. Key had tried it in fifteen or twenty cases. All the cases had terminated with exactly the same results as if the knife had been used. M. Cancoin had operated in four cases in this country, and he (Mr. Birkett) was in a condition to state the ultimate results of these proceedings. The first case was that of a lady thirty years of age, who had been operated upon three times by Sir Benjamin Brodie, and twice or thrice by Mr. Turner, of Manchester. The case was afterwards treated by M. Cancoin, and did not recur. But it was well known that this was not a case of cancer at all, but was simply one of adenocoele. It was reported, however, at the time as a case of cancer, and vaunted as a cure of that disease. The other three cases terminated fatally, just as though the ordinary operation by the knife had been performed. The cases recorded by M. Cancoin in his work might be divided into four distinct classes—1, cases of chronic abscess; 2, cases of ordinary adenocoele; 3, cases of irritable mamma. These, of course, all did well. The 4th were cases of true cancer, all of which had an unsatisfactory termination. He (Mr. Birkett) contended that the use of the caustic had no advantage whatever over that of the knife, and he called upon the author of the paper to state explicitly what was the real influence which the caustic exerted over the tissues surrounding the primary growth, so as to prevent a recurrence of the disease?

Dr. ROGERS had seen a case which had been operated upon in the Middlesex Hospital by Dr. Fell. The patient had died, after three weeks of agonizing torture, from carcinomatous disease of the chest, and effusion. He had seen a similar case of cancer of the os uteri, but with the same results, under the care of Dr. Pattison. This patient had died after the most intense agony, consequent upon the application of the caustic.

Mr. WEEDEN COOKE believed that the author's plan of slicing and cauterizing a cancerous breast was identical with that pursued by Dr. Fell. It was a most painful and severe operation, protracted for thirty or forty days; and, after all this suffering, did no more than the knife could do in a few minutes, without any pain at all, with the aid of chloroform. The plan pursued by Mr. Stanley, at St. Bartholomew's Hospital, was a

much more humane and equally efficacious proceeding; but in Mr. Cooke's opinion, excision by the knife, if an operation was necessary at all, was the only proceeding that ought to be sanctioned by the profession. Mr. Cooke, however, considered that operations, whether by caustic or the scalpel, were undesirable; that the disease was not eradicated by them, but that the dyscrasia which accompanied the disease was thereby increased, and life shortened. On the other hand, by supporting diet and tonic treatment, the constitution was enabled to resist the progress of the disease, and bring about that resolution by atrophy of the tumour which was observed in so many cases at the Cancer Hospital. Mr. Cooke thought that the whole profession would eventually protest against this revival of a treatment, painful in the extreme, and having no single advantage over the usual mode of excision by the knife.

Mr. HANCOCK did not see the advantage of Mr. Moullin's application over the use of the knife; in one case related by that gentleman, in which one of the glands of the axilla was enlarged, most surgeons would have either removed the gland, or have refrained from any operative procedure whatever.

Dr. CHOWNE contended that the cases related by Mr. Moullin had not been proved in any one instance to have been cancer at all.

Dr. CAMPS joined in this opinion, and believed that it would be ultimately found that Mr. Moullin's treatment was essentially the same as that employed by Dr. Fell.

Mr. BIRKETT, in justice to the author of the paper, felt bound to state that the history of all the cases clearly showed that they were true cancer.

Mr. MOULLIN, in reply, admitted that no microscopic examination had been made in either of his cases; but his opinion that they were cases of cancer had been fortified by that of others, well able to judge of the nature of the disease, and who had sent them to him as cases unfit to remove with the knife. He did not assert that these cases were cured, nor could he fairly do so, as his experiments had only commenced in December last. He had merely brought them forward as instances of the enucleation of the local disease by caustic. So far he thought they were entitled to the notice of the Society. He should watch these cases carefully, and report upon their progress at some future opportunity. He had other cases under treatment, respecting which he should lay the particulars before the profession. With respect to pain, in only one case was it remarkable, and in this the agony was beyond description; but in this instance the nitric acid had not been employed.

PATHOLOGICAL SOCIETY OF LONDON.

DR. WATSON, PRESIDENT.

DR. HARLEY showed a specimen of

GELATINIFORM DEGENERATION OF THE RIGHT HALF OF THE STOMACH AND OF THE INTESTINES.

It possessed a peculiar interest in consequence of the disease having followed upon extirpation of the supra-renal capsules. The animal, a white rat, had the right capsule extirpated on the 5th of February. Nine days afterwards, it appeared quite well; and Dr. Harley removed the left capsule. The colour of the hair and of the skin was carefully watched without any peculiarity being observed until the 23rd or 24th of February, when the neck of the animal was noticed to have become denuded of hair; the skin, however, retained its white colour. The animal began from this time to refuse food, and seemed gradually to get weaker and weaker until it died, on the 2nd of March—twenty-five days after the extirpation of the right, and sixteen days after the removal of the left, supra-renal capsule. The exterior of the body was carefully examined, but no discolorization of the skin could be detected. The portion of skin which had been denuded of hair, was now seen to be covered with a luxuriant crop of young hair, about one-eighth of an inch long, showing that the affection of the appendages of the skin had not been permanent, but only transient. Dr. Harley remarked, that he had frequently observed a loss of hair in animals that had been subjected to a severe operation. On opening the abdomen, the intestines looked like a gelatinous mass, and were so thin and transparent that the air-bubbles could be plainly seen floating in their interior. The right half of the stomach was in a similar condition, and contained only a clear amber-coloured mucus, with a faintly alkaline reaction, showing that the softening was not produced by the post-mortem action of the gastric juice. A similar condition of the intestines and stomach, Dr. Harley observed, is not unfrequently found in badly-nourished, half-starved children, especially in cases where they die of a depressed state of the organic nervous system; and he imagined that the disease was produced in the rat from the injury done to the ganglionic system of nerves in removing the supra-renal bodies. The left capsule had been extracted with great facility, the operation being performed in less than a minute. On that side of the body the wound in the peritoneum could only be detected on the closest inspection. The removal of the right capsule had been attended with some difficulty, in consequence of its adherence to the inferior vena cava. On this side, the liver was found attached by somewhat strong adhesions to the wound. The right side of the stomach being only in a state of gelatiniform degeneration, might perhaps be owing to the greater injury done to the nerves on that side. As the intestines of the

rat are, as a general rule, somewhat thin. Dr. Harley brought with him to the Society a healthy rat, in order that the members might, by comparing the intestines of the two animals, form a correct idea of the extent of the gelatiniform degeneration which had supervened upon extirpation of the supra-renal capsules.

Dr. QUAIN presented, for Dr. HUGHES BENNETT, a specimen of

ALBUMINOUS CONCRETION FROM THE CAVITY OF THE ABDOMEN.

The specimen, which is as large as a billiard-ball, was removed from the abdomen of a pauper, who had never shown any symptoms of its presence during life, by the late Dr. John Reid. In structure this concretion entirely resembled one presented by Mr. Shaw, of which an account is published in vol. vi. of the Society's "Transactions." Both are formed round a nucleus of fat. Dr. Bennett describes the nucleus in this example as consisting "essentially of segments of large cells, very probably those of fat separated by slightly fibrous partitions, in which traces of fusiform bodies are faintly visible. Towards the periphery of the nucleus the cells are filled with mineral matter, that in a molecular form is infiltrated through and gives firmness to the external portions of the nucleus, which is surrounded also by a fibro-calcareous envelope." Dr. Bennett regards the tumour as a result of the mechanical deposition of coagulated albumen around a nucleus of fat. He refers to the views of Ascherson on the coagulating influence of fat on albumen, and supposes these tumours to originate around one of the appendices epiploicæ or other fatty texture, which had become detached from the walls of the intestines or of the abdomen.

Dr. QUAIN presented for Dr. BALMAN, of Torquay,

THE LUNGS AND HEART OF A CHILD, WHOSE DEATH WAS APPARENTLY CAUSED BY A METASTASIS OF SUPPURATION.

The subject of these specimens was a stout boy, three years of age, who came under Dr. Balman's notice for an abscess situated in the neck, about an inch and a half from the angle of the left jaw, a little anterior to the sterno-mastoid muscle. He opened it, and gave exit to a considerable quantity of healthy pus; a counter opening was required on the third day; on the tenth day the child was well. On the day following, the child had some shortness of breathing, which continued for three or four days, the attack being described by the friends as resembling asthma. He had also some difficulty of swallowing liquids, but not solids; in fact, he ate bread-and-butter for his breakfast a few hours before his death. This occurred so suddenly that Dr. Balman, who had not seen the child during three days, on coming immediately that he was sent for, found him dead. A post-mortem examination showed the sac of the abscess still existing, the lining being

of a dirty-brownish aspect, but containing no matter, and having no communication with any organ. The œsophagus and the larynx were found perfectly healthy. When the trachea was laid open, a thick coating of puriform matter was seen extending downwards as far as the division of the bronchi, where there was rather a greater accumulation. The left bronchus, as far as it could be followed through its ramifications, was filled with the same creamy-looking matter. The right bronchus presented no such appearance, and the lung tissue appeared alike healthy on both sides, except the oozing of matter from the small bronchi of the left side. There was no coagula in either the pulmonary arteries or veins. The heart was healthy, save that there were but two (still efficient) aortic valves. Dr. Balman remarks that the interest of the case centred in the connexion which manifestly existed between the healing of the abscesses in the neck and the presence of a quantity of purulent matter in the air-tubes of one of the lungs. This matter, which appeared to be independent of true inflammatory action (and which, in reply to a question, was said not at all to resemble coagulated lymph), was manifestly the cause of the child's death, by producing a suffocative spasm. Dr. Quain added, that Dr. Balman's details of the case were so full and satisfactory that no doubt concerning them could exist.

OPEN FORAMEN OVALE.

Dr. QUAIN reported for Dr. PEACOCK and himself that the specimen submitted for examination by Dr. Markham at a previous meeting had been a good deal injured by former inspection. So far, however, as it was possible to judge, there was nothing abnormal in the cavities, the inlets, the outlets, or the valves of the heart, except the open foramen ovale, and the band stretched across it, as described in Dr. Markham's communication. They were unprepared to say how far this malformation was capable or incapable of producing the morbid sound described by Dr. Markham.

Dr. BURKE RYAN had twice heard the bruit mentioned by Dr. Markham in the account of his case. On both occasions, the sound was as if the blood passed over a roughened surface—on the first occasion, over the region of the heart; and on the second occasion, it extended higher up, near to the clavicle.

Dr. WARSON inquired if Dr. Markham had stated whether the arteries had been examined with the object of determining whether the bruit was caused by pressure on the lung?

Dr. QUAIN replied that the aorta had been examined with this object, but not the other arteries. He might remark, that in cases of an anomalous kind like the one under discussion, he was inclined rather to doubt his own senses in the matter, instead of assuming that no cause sufficiently clear existed for the sound. He recollected a case which had occurred to him some years since, in which a distinct bruit was heard over the heart, which after death was found to be

healthy; but on closer examination a fine loose membrane was found on the mitral valve, which caused the sound.

Dr. MARKHAM said that he had been particularly cautious in his examination of the case both before and after death. He had no doubt whatever of the existence of the murmur. How, then, was it caused? He thought it was most fair to attribute it to the cause he had specified in his paper.

Dr. BRISTOWE exhibited a specimen of

MALIGNANT DISEASE OF THE LOWER PART OF THE OESOPHAGUS.

The case proved fatal from perforation of one of the intercostal arteries. The patient, a woman, had suffered from dysphagia for twelve months, which gradually increased. The fatal hæmorrhage came on three days before she died.

Mr. ROBINSON showed an example of

PERFORATING ULCER OF THE STOMACH.

It was situated near the pylorus in a man fifty-three years of age, who died sixteen hours after the symptoms of perforation came on, which were of the usual kind. He had suffered from pain at the pit of the stomach, and hæmatemesis; the latter had been arrested and did not return.

Mr. HULKE exhibited the following specimens:

I. MELANOSIS OF THE EYEBALL.

The eye had been disorganized by violent inflammation twenty years before. Two months previous to admission into King's College Hospital the conjunctiva became red, and two small tubercles appeared on the front of the eye; these burst, and bloody serum escaped. Soon after this a tumour shot out from the point of the globe, rapidly attained considerable size, and projected between the lids. Its colour was dark, and its surface, from which there was a constant sanious oozing, was irregular. The projecting mass moved readily in association with the movements of the other eye. After removal by Mr. Bowman, the growth was found to consist of two parts—a dark blackish, and a lighter grey portion. Excepting that the cells of the dark part contained pigment, the minute structures of both portions were similar. The sclerotic had given way behind the insertion of the tendon of the inner rectus and also near the entrance of the optic nerve, and in these situations there were small nodules of the tumour, outside the globe, continuous with the mass filling its interior. It is interesting to notice at how late a period in the history of the case melanosis has been developed. It appears, also, that the free mobility of the tumour was not a sure sign of the sclerotic coat being entire posteriorly.

II. ENCEPHALOID CANCER OF THE EYEBALL.

The patient was a child about four years old. The development of the growth had been watched for several months. The history of the case

presented nothing peculiar. There was the usual bright reflex from the bottom of the eye, and numerous bloodvessels were seen ramifying upon it. At length the eye had become inflamed, and was removed by Mr. Bowman. The situation of the vitreous humour was filled by a soft brain-like growth, which was abundantly vascular, and presented the minute structure of encephaloid cancer. The choroid and ciliary muscle were much thickened by inflammatory exudation.

Mr. CHRISTOPHER HEATH exhibited a specimen of

CHRONIC RHEUMATIC ARTHRITIS AFFECTING THE HIP-JOINT.

This preparation was removed from a subject in the dissecting-room of the Westminster Hospital. The subject was a male, aged seventy-one; and the only history that could be obtained was, that he had been bed-ridden for four years, and had suffered from rheumatic pain in the hip for many years previously. The acetabulum is considerably enlarged; and over a large portion of it the cartilage is absorbed, and the bone eburnated. There are no remains of Haversian gland or ligamentum teres, and the usual bony markings are absent. The cotyloid ligament is much thickened and flattened at its outer part, thus forming a considerable portion of the cavity of the joint; and at the upper part is a projection of new bone from the brim of the acetabulum. The head of the femur is enlarged and elongated; and in its centre the articular cartilage is wanting, and the bone is eburnated.

Mr. HUTCHINSON showed a specimen which had been forwarded to him by Dr. Allen, of the Liverpool Royal Hospital, of

BRONZED SKIN WITH PERFECTLY HEALTHY STATE OF THE RENAL CAPSULES.

The patient was a man, twenty-five years of age, who had died from acute pneumonia. He had been in the Crimea, where he had suffered from yellow fever, and had never since been well. Previous to the attack, two years before, his skin was white, but had been discoloured since. Dr. Gull had thought that the pituitary gland had some direct relation to the capsules of the kidneys, being of a similar structure. In this case the gland had been sent to Dr. Gull, who had found the posterior and anterior lobes both somewhat disorganized. This case showed that a patient might have bronzed skin without disease of the supra-renal capsules; but it was worthy of note that the discoloration of the skin did not extend to the face, as was usual when the capsules were diseased.

Dr. WATSON inquired whether the pituitary gland had been examined in other cases of bronzed skin?

Mr. HUTCHINSON only knew of one other case in which the examination had been made, and in this the gland was diseased.

Dr. BARKER exhibited a

BOY'S HEART WHICH WAS AFFECTED WITH ENORMOUS HYPERTROPHY AND DILATATION OF THE LEFT VENTRICLE.

The patient, who was seventeen years of age, had suffered from rheumatism for seven or eight years, attended by attacks of dyspnoea and palpitation. There was disease of the aortic valves; the sounds usual in such cases were present; there was dilatation also of the innominate and right subclavian arteries.

Dr. BRISTOWE showed a specimen of

ULCERATION OF THE COLON CONNECTED WITH PNEUMONIA.

The man had died of pneumonia in the third stage; and numerous ulcers, in various stages of development, were found in the colon. The ulcerations were of the dysenteric, and not tubercular, character. Pneumonia, he believed, was not very unusually associated with this form of ulceration in the large intestines. In his experience it existed in the proportion of one in four cases.

Dr. BRINTON inquired whether in these cases the pneumonia had supervened on phthisis. He had seen cases in which ulceration had existed under such circumstances; and he attributed it to the phthisis, and not to the pneumonia.

Dr. BRISTOWE replied that tubercles had only existed in one case. The ulceration he alluded to was present in cases of pneumonia independent of phthisis. The ulceration was confined to the colon, and was of a dysenteric and not tubercular character. At first, he thought the condition might have been the result of the treatment of the pneumonia by antimony, but this treatment had only been employed in three of the cases to which his experience extended. In reply to a question, Dr. Bristowe stated that there was no dysentery present in the case he had brought forward, but only a slight diarrhoea.

Dr. W. OGLE exhibited a

SALIVARY CALCULUS,

the size of a French bean, which had been extracted from a man aged thirty-one, who had suffered from symptoms of its presence for sixteen years.

Mr. HUTCHINSON showed a preparation from a case of

SPINA BIFIDA WITH HYDROCEPHALUS.

The subject of the case, a little boy, aged fifteen months, had died in consequence of the spontaneous rupture of a large sacral spina bifida. Mr. Hutchinson had seen him about a fortnight prior to death, in consultation with Mr. Marsh, of St. John's-street, who had attended the case from the time of birth, and to whom he was indebted for permission to bring the specimen before the Society. At the time of birth, the tumour, which covered the lower sacral region, did not bulge much, but not long afterwards it began to fill, and the infant's head also enlarged. In spite of these affections, however, the child grew, and appeared of average intelligence. His lower extremities

were wasted, and the feet drawn upwards (talipes calcaneus). On several occasions, the question as to propriety of puncturing the tumour with a fine trocar was entertained, but always decided in the negative, on account of the existing cranial disease. The head went on increasing, until it became fully twice the natural size. Two weeks prior to death, the spina bifida was as large as a foetal head, and the skin over it stretched and very thin. A few days later, it gave way and collapsed. The fluid drained away by a mere pin-hole opening, and no suppuration occurred. The drain, however, was more than the infant's strength could bear, and it sank from exhaustion. Some diminution in the size of the head had been noticed during the last few days of life. At the autopsy, the lateral ventricles of the brain were found distended by more than a pint of clear serum, the septum being wholly destroyed. The ventricle of the medulla oblongata was also distended, and passing down from its lower extremity was a canal about as large as a crow-quill, which ran the whole length of the medulla in its centre, and terminated in a large bag of arachnoid membrane, which hung in the cyst of the spina bifida. This sac, which would have held a pigeon's egg, had no communication with the larger cyst, and evidently consisted of the terminal prolongation of the ventricular lining membrane. The spina bifida itself presented nothing unusual: The laminae of the sacrum were wholly wanting, and several nerves of some size were attached to the walls of the cyst. Excepting one or two flakes of lymph, there were no evidences of inflammation. Mr. Hutchinson remarked upon the interest which attached to the canal which passed the whole length of the cord connecting the cerebral ventricles with a serous sac at the cauda equina. It was no doubt a relic of foetal structure, and evidence of the tendency to effusion into the cerebral and spinal cavities having existed during intra-uterine life.

Mr. HUTCHINSON also showed, for Dr. Sloane of Leicester, a specimen of

LARGE CYST IN THE WALLS OF THE STOMACH.

The patient from whom it had been removed was a man, aged thirty-three, who had died of fever in the Leicester Infirmary after a short illness. At the autopsy, on pouring water into the stomach, it was noticed that it did not pass through the pylorus; and on examination it was found that a tumour, the size of a large cherry, fitted as a valve over the gastric aspect of the opening. This proved to be a cyst capable of containing a pigeon's egg, and filled with an opaque fluid, which glittered with plates of cholesterine. The cyst projected externally, as well as into the cavity of the stomach, and was of nearly equal size on each side. The muscular coat appeared to have been perforated. There were no signs of inflammation either in the serous or mucous coat. No symptoms of obstruction had existed during life, and there had been no vomiting—a circumstance which was explained by the fact that the fluid in the

cyst yielded to pressure, and might be easily forced into the sac on the exterior of the stomach.

Dr. WILKS exhibited a specimen of

DISEASE OF THE HEART WITHOUT VALVULAR AFFECTION.

This specimen came from a woman who had been under Dr. Barlow's care, in Guy's Hospital, for heart disease. She died with all the usual symptoms of cardiac derangement, as dropsy, &c. She was thirty years of age, and had not been well since an attack of acute rheumatism eighteen years before. The heart was remarkable as exemplifying the effects of a general carditis independent of disease of the valves. The serous membranes, both outside and within the heart were much thickened, indicative of a previous inflammation; and the muscular structure itself was pervaded throughout by a number of white streaks, producing what is known as the fibrous degeneration. The endocarditis had been most intense towards the apex, rather than the base, of the ventricles, and thus, probably, the absence of valvular contraction, and the existence of the other form of malady. The whole organ weighed twenty-four ounces. The left ventricle was much dilated.

Dr. WILKS also exhibited, for Dr. Burton Brown, some specimens of

LOOSE BODIES IN THE PERITONEUM,

which that gentleman had found in the dissecting-room of Guy's Hospital. Many similar ones had already been shown at this Society by various members, and different opinions expressed as to their nature. They are generally much alike, consisting of a substance about the size of a bean, having a dense fibrous capsule, and containing within some amorphous matter composed of fat and earthy material. These bodies have generally been found loose, though sometimes hanging by a thread, as if just ready to drop, as in some specimens in Guy's Museum. The present one corresponded in every respect with these, but was found developed within one of the appendices epiploicæ, from which circumstance Dr. Brown concluded that these bodies were new growths formed within the appendices, and that they were subsequently set free by the strangulation of the pedicle; and he was inclined to suppose that they were alterations of lymphatic glands, which he had often found to exist in these intestinal appendages.

Dr. GRAILLY HEWITT exhibited a specimen of

MALFORMATION OF THE HEART,

taken from an infant who died excessively wasted about four months after birth. The pulmonary artery was quite obliterated at its junction with the right ventricle, was about the size of a raven's quill, and divided into two vessels of unequal size, one of which probably opened into the aorta; this was not, however, verified, the heart not having been examined *in situ*. The two ventricles opened freely into the aorta, and, by a deficiency in the upper part of the ventricular

septum, into each other. The aorta was large, and provided with three large, loose valves. The foramen ovale, as is usual in such cases, was open. The right ventricle was as large, or larger, than the left, and its walls had a maximum thickness of two fifths of an inch. During life a loud systolic murmur was heard over the front of the chest; the respiratory murmur was feeble, absent at certain situations. The skin remarkably white, its temperature very low, and the body excessively emaciated. Cyanosis was rarely present, and scarcely ever to a marked degree. The lungs were found after death, as was expected, but little expanded, large portions of them (nearly the whole of the left lung) being in the condition known as atelectasis. This kind of malformation has been described by Farre, Peacock, and others, and in most of such cases the lungs have been found to receive a supply of blood through the ductus arteriosus, which remains pervious.

Dr. HAWKSELEY exhibited the diseased parts, and gave the particulars, of a

CASE OF MALIGNANT DISEASE OF THE LARYNX SUPERVENING ON COMMON SORE THROAT.

The subject of it, a woman aged fifty-one, had for years enjoyed good health, with the exception of occasional sore throats. The catamenia had ceased eight years. She stated that last June (seven months previous to her death) she was attacked by a severe cold and sore throat. The tonsils were so swollen that for three weeks she was unable to swallow anything but liquids. After this she became hoarse, and two glandular swellings occurred in the neck, one of which, near the larynx, continued throughout her illness. The sore throat and enlarged tonsils recovered, but the difficulty of swallowing and impediment to the breathing went on gradually increasing up to the period when Dr. Hawksley was consulted,—viz, five months after the commencement of the disease. She then presented a most emaciated appearance; her breathing was quick and painful to witness, inspiration and expiration being accompanied by a loud, shrill, croupy sound. She also complained of great difficulty in swallowing, precluding the deglutition of solids, and making that of fluids very painful and suffocative, leading also sometimes to a desire to vomit, on which occasions, however, mucus only was discharged, never any food. She had some little pain in the larynx, particularly at night, and it was tender to the touch. She spat up daily a large quantity of clear jelly-like mucus, which had the appearance of liquid albumen, but was much more tenacious. After some days a slight curdy sediment formed in it. Both these portions of the sputa, but particularly the sedimental portion, exhibited under the microscope abundant epithelial particles, often blood, sometimes pus globules, and constantly numerous cells more or less epithelial-like, but resembling also the *hastily-* and *over-developed* forms common to the different varieties of malignant growth. The physical examination disclosed, in the mouth, the appearance of injected fauces

only. The larynx was slightly enlarged and tuberculated; the chest, extremely emaciated, was found by Dr. Sibson's chest-measurer to move only moderately, particularly on the left side. Percussion was normal. The respiratory murmur was feeble, particularly on the left side. The croupy sound of the larynx was of course heard loudest and most harshly over and near to the larynx itself; it was also heard well in the upper parts of both sides of the chest, loudest on the right side. The heart's sounds were natural. The symptoms went on getting worse until the dysphagia became complete, and she sank, perfectly anæmiated, seven months from the commencement of the disease. At the post-mortem examination the only important feature discovered was the tumour which was found occupying the right side of the larynx, in the upper part of its cavity, below the superior border of the ventricle and the epiglottis. It was about the size of a large filbert, and its structure was fused into the neighbouring tissues, especially those of the pharynx, comprehending the attachments of the superior and middle constrictors, so that the coats of the tube were thickened and matted together. An elliptical ulceration occupied the under surface of the epiglottis from about its middle down to a little below the ventricular orifice, so as to engage the inferior vocal cord. The tumour was also connected to the right ala of the thyroid and the cricoid cartilages, so as to unite them into an inflexible mass. These cartilages also were at least twice their normal thickness, and cut with a gritty, horny feel. In the microscopic examination of the tumour, Dr. Brinton's valuable assistance was sought; and the further examination showed that the tumour was cancerous. It had the gristly appearance and section of scirrhus to the naked eye, but its cut surface exhibited here and there opaque friable points, almost close enough to suggest their being the interstices of a network formed by the more fibrous portion. Under the microscope these opaque points turned out to be composed of large aggregations of cells, compressed into irregular forms by close packing, and exhibiting appearances of a more or less complete degeneration of their contents. Many of them, however, still contained nuclei, and had elongated processes of great delicacy, which appeared to unite, with those of adjacent cells, into a rudimentary fibrous network. The contents of these cell-masses were composed of ordinary fibrous cancer, mingled with the elements of the original areolar tissue, the yellow or elastic fibres being extremely distinct and natural. The thickened and ossified cricoid cartilage was invested by a perichondrium, the tissues of which were interlaced with bony points, so that when stripped off from the subjacent mass its inner surface sustained numerous little hard protuberances. The calcareous deposit was of two kinds: a sparing amount of what seemed to be ordinary bony matter, sprinkled throughout a cartilage otherwise of normal structure; and an unorganized granular mass which appeared to have been originally de-

posited in a fibrous tissue, and consisted almost exclusively of carbonate of lime.

Dr. WATSON inquired if the larynx was often the seat of malignant disease. He had never seen a case of it.

Dr. HAWKESLEY replied that Rokitanaky had alluded to one such case, but had given no particulars of it.

Mr. BIRKETT exhibited two examples of

CARIES AND NECROSIS OF THE CANCELLOUS TISSUE OF THE HEAD OF THE TIBIA.

The first was from a man, aged fifty-five, who was in Guy's Hospital, and from which bone, after the disease had existed for five months, Mr. Birkett had removed a considerable portion of the cancellous tissue. The bone was carious, and the cells were filled with pus. It was not abscess in the head of the bone, nor was there a necrosed mass. The case was proceeding favourably, although the discharge of offensive pus continued from the sinus, when he was seized with severe constitutional disturbance, arising from inflammation of the knee-joint. Under this attack he died in six days; and ten months after the gouging away of the carious bone. In the interval he had enjoyed good health, and had been free from great pain. The knee-joint was full of pus, and a probe could be passed from it into the cavity in the head of the tibia. The preparation shown, was a macerated and dry head of the tibia, with a cavity in its cancellous tissue, from which a foramen led to its articular surface; and to a point close behind the posterior attachment of the articular capsule. Through the foramen the pus had traversed and produced ulceration of the capsule, and infiltration of the knee-joint.

The second was the head of the tibia of another patient, which showed a mass of necrosed cancellous tissue in its centre. In this case Mr. Birkett had performed amputation through the lower third of the femur, and the patient was convalescent. The man, aged twenty-seven, had been in the Land Transport Corps, and came into Guy's from Renkioi Hospital in a most cachectic condition. Several pieces of necrosed bone had been removed in Guy's Hospital, and during three or four months the man was the subject of acute albuminuria. Having recovered from this attack, and finding that the head of the tibia was extensively diseased, as well as portions of its shaft, amputation was performed. A section of the head of the bone showed a mass of necrosed cancellous tissue in its centre, and part of the articular cartilage on its surface was loosened from its attachments.

Mr. SYDNEY JONES exhibited

1. TWO SPECIMENS OF CYSTICERCUS FASCIALARUM FROM THE LIVER OF THE MOUSE.

One was about an inch and a half in length, gradually tapering from the anterior to the posterior extremity, in which latter situation is a terminal cyst about the size of a pea. With this specimen was the cyst on the under surface of the

liver, which was removed from the animal. The other specimen was a much larger one, being between six and seven inches in length. It had the same form as the other; the segmentation was, however, more distinct, and the terminal cyst somewhat smaller. These were not exhibited on account of their rarity, but to show the size to which the larger animal had attained whilst in its encysted condition.

2. MALIGNANT TUMOURS OF THE BRAIN.

They were removed from the brain of a patient, aged forty-eight, who about two years previously had suffered from encephaloid disease of the breast. This breast was removed, and the patient went on well till last November, when she began to complain of very severe pain in the head, incessant, and always referred to the vertex. This was the only symptom till some little time before her death, when motion began to be impaired on the left side, and she had occasional convulsive attacks. After her death only the head was examined. Embedded in the left hemisphere was a tumour about the size of a marble, resting upon the corpus callosum, and projecting somewhat into the longitudinal fissure. A smaller one, about the size of a bean, was found on the outer side of the right corpus striatum. The tissue of these tumours was firmer than that of brain tissue, in which they might be felt as comparatively hard nodules. Their section was of a yellow colour, and yielded a copious creamy juice. The cerebral substance in their immediate neighbourhood was much softened, and its red colour showed its increased vascularity. A microscopical examination of the juice showed nuclei, round or oval, varying in size from the $\frac{1}{15}$ to $\frac{1}{12}$ of an inch in diameter, with or without a nucleolus. Some few of them were clear, or only very minutely granular, but the greater number of them were filled with dark oily matter; granular matter was found in abundance throughout the field, separate, or collected into masses, and forming glomeruli. Besides these, cells were found generally of very large size, and containing a number of nuclei. Some were evidently branched; the largest had a diameter of $\frac{1}{12}$ of an inch, whilst the smallest were only $\frac{1}{15}$ of an inch. The larger ones, however, predominated, and generally contained three or four large nuclei ($\frac{1}{15}$ of an inch in diameter,) each nucleus having a nucleolus, large and distinct, and varying from $\frac{1}{15}$ to the $\frac{1}{12}$ of an inch in diameter. In the growing part of the tumours—i.e. at their circumference, the cells were most abundant, and it seemed that in these granular oily matter is afterwards collected, and that they eventually burst, and discharge the nuclei and granular matter.

Dr. ARMITAGE showed a preparation illustrative of

MALIGNANT DISEASE OF THE PROSTATE GLAND.

It was removed from a man, sixty-five years of age, who had suffered from symptoms of the disease for two years. The most prominent

symptom was pain in the back, which had gradually become worse. He had an attack of hæmaturia about a year since. The tumour could be felt through the rectum. The deep inguinal and lumbar glands were affected with cancer. There were no signs of cancerous disease in any other organ.

WESTERN MEDICAL AND SURGICAL SOCIETY.

DR. FULLER, V.P., IN THE CHAIR.

MR. LEGGATT read a paper

ON A CASE OF PROGRESSIVE FATTY DEGENERATION AND ATROPHY OF THE VOLUNTARY MUSCLES.

He commenced by alluding to the various monographs and papers hitherto published on the subject, especially that in the "*Archives Générales de Médecine*" (1850), which contains the history of several cases, partial and general. Dr. Moore (*Dublin Quarterly Journal*, 1852) also published a similar paper. He then passed on to Dr. R. Quain's long note appended to his paper on Fatty Degeneration of the Heart ("*Medico-Chirurgical Transactions*," 1850), in which several cases are mentioned in which this disease occurred. He then alluded to the paper on this subject by Dr. Meryon, which appeared in the "*Medico-Chirurgical Transactions*," 1852. Many cases are there recorded, but the records of only two post-mortem examinations, in both of which the nervous centres were found perfectly healthy, though the voluntary muscles of the upper and lower extremities were observed in various stages of fatty degeneration. The only symptom observed had been loss of power commencing in the lower extremity. Cruveilhier noticed the same disease in the "*Archives Générales de Médecine*," 1853. In all his cases examined, the nervous centres were healthy, but in two the anterior roots of the spinal nerves were greatly atrophied, especially in the cervical region. Hence he considered the disease to be essentially dependent on this cause; that the disease is, in fact, paralysis; and that the atrophy and degeneration of the muscles are secondary consequences only. Another case was quoted (*British and Foreign Medico-Chirurgical Review*, Oct. 1855), in which the disease was evidently dependent upon chronic arachnitis of the cord, originating in a fall; in this case, too, the anterior roots of the spinal nerves were inflamed, softened and atrophied. In his own case, his observation of it had extended over about ten years. The subject of it was a male, born in the country, of healthy parents, in 1838, and removed to London in 1840. When first seen by the author, he was strong, vigorous, and healthy; but in the summer of 1845, he had jaundice, measles, and remittent fever, the latter severely. After his recovery, he became weak in his lower extremities, and fell frequently in walking. In 1847, he was seen by Sir B. Brodie, who considered the case as some spinal affection.

In 1850, Sir B. Brodie recognised the disease as similar to Dr. Meryon's case alluded to. The symptoms were, loss of power in the lower extremities, some wasting of the muscles of the thighs, those of the calves remaining firm and large. The treatment was essentially tonic, with galvanism. No benefit occurred, the muscular weakness increased, and gradually extended itself to the upper extremities. The muscles of the face, of deglutition, and articulation were not affected, nor was the sensibility of the skin. The rectum and bladder were unaffected, except that during 1849 there was slight incontinence of urine. His faculties were unimpaired, and his general health was good. He died from pneumonia, in 1856, aged eighteen. A careful examination was made twenty-eight hours after death, during which the muscular system generally was found to be wasted, and the lower limbs much emaciated. The spinal cord was softened about its middle third, but not inflamed. The roots of the spinal nerves were healthy, and so was the brain, and all the different viscera, except the right lung at its base, where it was softened. In the cervical and dorsal regions of the back, the muscles were healthy, in the lumbar pale; the intercostals were thin, and the diaphragm very pale. By the microscope, no inflammatory alteration could be detected in the cord or its membranes, but it showed fatty degeneration in its various stages in the pale muscular structures, and in some of these, fibrous degeneration without fat. In the heart, much of the striated appearance of health was absent, and much of its structure was undergoing granular and fatty degeneration.

The author then analysed fifteen cases of this disease, and stated the results thus:—With respect to the brain: in six it was healthy; in one the white substance was softened; in one there was an osseous plane in the arachnoid. With respect to the cord: in six it was healthy; in one partially softened with fatty degeneration; in one partially softened without fatty degeneration; in four the anterior roots of the nerves were not observed; in one they were inflamed, softened, and atrophied, the cord also being inflamed and softened; in one they were normal, while the cord was softened, but not inflamed. He thus considered that the disease in question was not of spinal origin, in his own case, being persuaded that the softening of the cord was only of recent origin, and not the cause of the paralysis. He also regarded it as premature to advance M. Cruveilhier's theory, that it consisted in atrophy of the spinal nerves at their roots, but rather viewed the disease as dependent upon depraved nutrition of the muscular system generally. In addition to wasting and want of power, M. Cruveilhier had described amongst the symptoms, pain, twitchings, and cramps; these are described in no other paper. In all the general health was good, and the command of the sphincters complete. The prognosis as to progress and to recovery was always unfavourable. The treatment, of course, was tonic with the use of galvanism. The author then, in conclusion,

enumerated the causes, and grouped them thus—1, excessive muscular action and fatigue; 2, severe illness and other exhausting influences; 3, hereditary tendency (?). This seemed established in Dr. Meryon's and M. Aran's cases, though in the present instance the author could not trace this as a cause.

Mr. BRODHURST mentioned a family, in which four out of nine members had been similarly affected. Of these, two had died, and two survived; of the latter, one had head symptoms; of the former, in one the brain was found softened after death, the cord not being examined; of the other, one died from apoplexy, one from phthisis, and one from hydrocephalus.

Dr. FULLER related three cases in its partial form, affecting the back of the neck and the right upper extremity (two cases) respectively.

Mr. MARTYN stated that the survivors mentioned in Dr. Meryon's paper had been improving up to the present time.

ROYAL SOCIETY.

LORD WROTTESLEY, PRESIDENT, IN THE CHAIR.

A PAPER WAS READ, ENTITLED

ON THE QUANTITY OF AIR INSPIRED AT EVERY 5, 15, & 30 MINUTES OF THE DAY AND NIGHT, AND UNDER THE INFLUENCE OF EXERCISE, FOOD, AND MEDICINES—ON THE TEMPERATURE OF THE BODY, &c. BY EDWARD SMITH, M.D., LL.B., &c., ASSISTANT-PHYSICIAN TO THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON.

THIS was in continuation of a series of inquiries began in 1855, in reference to respiration and pulsation in health and disease, and having for their object to determine the serial changes in the 24 hours. Those on the rate of the functions made at every hour of 6 days and nights, in phthisis, and of 3 days and nights in health, have already been published in the "Transactions" of the Royal Medico-Chirurgical Society. This paper is devoted chiefly to the determination of the quantity of air inspired under similar circumstances, but the rate of respiration and pulsation, the depth of inspiration, the temperature, and the barometric pressure, are also recorded. The inquiries were made upon and by the author, and by the aid of a spirometer, consisting of Glover's patent dry gas-meter, of improved manufacture, of reversed action, so as to measure inspiration, and graduated to record from 1 to 1,000,000 cubic inches. When in use, an ori-nasal mouthpiece was employed, connected with the spirometer by vulcanized caoutchouc tubing. The first part of the paper was devoted to a consideration of the total quantity of air breathed in the 24 hours. This was effected by three experiments. 1st. By wearing the instrument during 5 minutes at the commencement of every $\frac{1}{4}$ of an hour, from 5 A.M. to 6 $\frac{1}{4}$ P.M.; and every $\frac{1}{4}$ hour, from 6 $\frac{1}{4}$ P.M. to 3 $\frac{1}{4}$ A.M. Exercise and food were taken inter-

mediately, but sleep was necessarily excluded. The inquiry was always made in the sitting posture. 2ndly. By wearing it continuously during the whole 24 hours, except at intervals amounting collectively to 40 minutes, and recording the results every 5 minutes. Food, exercise, and sleep were taken, and the periods recorded. The mind was occupied in reading or in games, and the whole day passed in a normal condition. No fatigue was felt after the inquiry. 3rdly. By an inquiry similar to the last, but continued only from 6½ P.M. to 5½ A.M., and having for its object to determine the precise influence of sleep. In the first inquiry, the average returns were, after supper, 354 cubic inches; before breakfast, 358 cubic in.; after breakfast, 445 cubic in.; after dinner, 448 cubic in.; and after tea, 454 cubic in., per minute. In the second inquiry, the minimum quantity was 21·230 cubic in., and the maximum nearly 40·000 cubic in., per hour. The average of the lying posture was 450 cubic in. per minute; and of the sitting posture, 533 cubic in. per minute. The third showed a minimum respiration of 352 cubic in. per minute during sleep. From these facts was deduced the wear of system in various classes of the community, and it was shown that different classes must breathe daily quantities of air, varying from 700,000 cubic in. to 1,400,000 cubic in.

The second part of the paper contained the results of inquiries into the influence of the following agents:—

1st. Those which increase respiration—viz. posture of body walking and running at various amounts of speed, walking in the sea, riding on horseback at various paces, riding in carriages and on the railway in different classes, and on the engine at various rates of speed, the labour of the tread-wheel, ascending and descending steps, rowing, swimming, Marshall Hall's ready method, reading and singing, carrying various weights at a certain speed, cold bathing; albumen (egg), gelatin, beefsteak, oatmeal, wheaten-bread, potatoes, milk, suet and milk, sugar, rum, tea, coffee, ether, sunlight, heat.

2nd. Those which decreased the quantity of air breathed—viz. darkness, cold air inspired; all fats, as cod-liver oil, olive oil, butter, beef fat; arrow-root, brandy, wine, kirchenwasser, compound and foetid spirits of ammonia, opium, morphia, hydrocyanic acid, tartar emetic; and salines, as chloride of sodium, and febrifuge medicines.

3rd. Those which had a mixed effect—viz. chloroform, chloric ether, and amylene. Digitalis first increased and then decreased the quantity.

In each instance the instrument was worn during 5 minutes at one time, and the results averaged per minute. In reference to exercise, that agent was continued from 3 to 10 minutes before the influence of it was sought. When ascertaining the effects of food and medicines, the sitting posture was exclusively selected, and was maintained for some time before the inquiry commenced, and whilst the preliminary observation was made which constituted the basis quantity.

An inquiry was made directly after having swallowed the substance under investigation, and repeated during the first quarter of an hour, and subsequently at the beginning of each succeeding quarter of an hour for about two hours. The periods selected for the inquiry were before breakfast and at least three hours after a meal, so as to avoid the perturbing influence of previous food. The author strongly insisted upon the following circumstances being noted and maintained unchanged during such inquiries—viz. posture, sunlight, temperature, season of the year, exertion, and mental emotions. He recorded the number, absolutely and also relatively to the basis quantity recorded immediately before the investigation; but in reference to the influence of food and medicines he believed the latter only to have importance. He found that the various kinds of exercise increased the quantity of air inspired per minute up to 7 times the quantity breathed normally in the quiet lying posture. In reference to food, the most interesting facts were, that whilst all fats and pure starch decrease respiration, sugar largely increases it; and that albumen, gelatin, milk, and all ordinary nitrogenous diet, increase it to a moderate degree only. Also, that whilst brandy, wine, and kirchenwasser greatly decrease respiration, rum largely increases it. Ammonia gave opposite results, according to the preparation and dose, which accounted for the difference of opinion as to its influence. The author was assured of the correctness of Dr. Billing's assertion, that ammonia may be a sedative, and, moreover, that it is a most powerful one. Certain agents, as digitalis, had a contrary action during their influence, first to increase, and then to decrease, respiration. The most powerful respiratory excitants were—ether, tea, and sugar; and the most powerful depressants were, some preparations of ammonia, opium, morphia, tartarized antimony, kirchenwasser, and sleep; and these, with salines, which have the same action, are the common antiphlogistic and febrifuge remedies. Sunlight increased, darkness decreased, respiration; heat increased, and cold decreased respiration, when the difference was considerable; cold applied to the skin increased, but cold air inspired decreased, respiration.

In the 3rd part were contained the results of inquiries into the temperature of the expired air, showing that it was from 4° to 8° lower when inspiration had been effected through the mouth than through the nose—a fact teaching the importance and the benefit of breathing through the nostrils only in cold weather. It was also proved that a part of the body may have its temperature increased by friction, &c., 20° in a few minutes, without having received any increase of heat externally—a fact implying that under such circumstances the heat of the surface is rather due to a larger distribution of blood there than to any increased generation of heat.

The tables and diagrams accompanying the paper contained the record of 1200 series of observations, and various deductions of professional

and general interest were appended. The subject was entirely novel, as previous observers had limited their attention to the chemical changes in respiration, and at irregular intervals only.

Dr. THEOPHILUS THOMPSON said, he was unwilling such a communication should pass without comment, although from the copiousness of material it was difficult to select. The Secretary, in reading the paper, had called special attention to the observations on Sugar. The observation of the author, that sugar increased the amount of respiration, was certainly opposed to the opinion he (Dr. Thompson) had been induced to form from other experiments, particularly those made a few years since by Dr. Böcker of Bonn, who, when varying his diet by the addition of two ounces of sugar daily, found the carbonic acid exhaled from his lungs reduced by about one-tenth. Similar results had also occurred under the use of diluted alcohol, and of various alcoholic drinks. Brandy, beer, white Rhenish wine, and still more red Burgundy, occasioned a reduction in the quantity of carbonic acid expired; the average reduction being, probably, about a fifth. Tea, in Dr. Böcker's experiments, did not materially influence the respiratory combustion, but it acted like alcoholic drinks as respected the reduction of earthy phosphates in the urine—a result more observable under the alcoholic experiments, and most of all from the use of sugar, by which the earthy phosphates were reduced one-half; the general conclusion being, that all these agents tended to arrest the metamorphosis of tissue, and thus to enable us to do with a less amount of ordinary food. It would thus appear that Dr. Smith's experiments, except in the case of brandy and, to a certain extent, tea, were not in harmony with the statements of Böcker; for although the quantity of respiration had not necessarily an exact relation to the carbonic acid exhaled, it was reasonable to expect these conditions to increase or diminish together. He (Dr. Thompson) mentioned these points, not as throwing doubt on the experiments of the author, but as proving the necessity for further inquiry. Observations made with such care and zeal were of peculiar value in inquiries not merely affecting the restoration of the sick, but illustrating agencies important to the whole community, because affecting, moment by moment, the comfort and efficiency of persons in health.

Professor SHARPEY bore testimony to the careful precautions and patient labour with which the author's experiments had been made, as peculiarly calculated to lead to trustworthy results. It was a curious circumstance that brandy and rum should act differently on the respiration—the former decreasing, the latter increasing it. He (Dr. Sharpey) agreed with the opinion expressed by Dr. Thompson, that with increase of respiration, an increase of carbonic acid must be expected, although not necessarily proportional. The inquiry instituted opened questions of remarkable interest. The different amount of respiration in men and women was curious. Andral and Ga-

varret, for example, had observed that the amount of respiration in women, particularly after puberty, was much less than that of men. Dr. Smith's remarks on the influence of light confirmed those of other investigators. Frogs had been observed to have their respiration increased by this agent, he (Dr. Sharpey) believed not only through its influence on the skin, but, probably also through the medium of the eye. He considered that the harmony between the author's results and those obtained by the best previous observers was evidence of their truthfulness.

Professor CARPENTER gave an interesting description of the apparatus employed by the author, and showed the great advantage derivable from a lengthened and continuous series of observations, so contrived as to avoid the restraint and discomfort which some other modes of experiment involved, whilst free from different sources of uncertainty present in observations made in confined chambers without the use of any apparatus. Carrying out such observations continuously for 24 hours without fatigue implied normal conditions. Dr. Carpenter referred to the remarks made on light and darkness in relation to respiration. He knew of instances in which persons were affected with laborious and distressing breathing if the candle was extinguished during their sleep. Such instances were extreme, but they were favourable to the opinion that light under ordinary conditions had some effect as a stimulus to the reflex actions concerned in respiration.

Mr. BABBAGE had often regretted that such important functions as the circulation and respiration were disregarded in books on *Natural History*. He thought the average rapidity of pulse and respiration of animals should be recorded as a part of the description in works on Zoology, and that every intelligent person might assist, especially as respects domestic animals, in establishing the averages. Mr. Babbage had lately at the Zoological Gardens counted the respirations of various animals. He was understood to say that he found that of the lepidosiren rather more than 5 in a minute, of the flounder 15, the rhinoceros 17, and the Bengal tiger 25.

The noble PRESIDENT expressed his regret that on such occasions as the present the valuable materials produced in discussion could not be recorded, as well as the paper by which they were elicited.

A Mirror
OF THE PRACTICE OF
MEDICINE AND SURGERY
IN THE
HOSPITALS OF LONDON.

Nulla est alia pro certo noscendi via, nisi quam plurimas et morborum, et dissectionum historias, tam aliorum proprias, collectas habere et inter se comparare.—MORCAESI. *De Sed. et Caus. Morb.* lib. 14. Proœmium.

LONDON HOSPITAL.

Permanent Stricture of the Urethra, with Fistula in Perineo and a False Passage; Syme's Operation of External Division; Orchitis, followed by Abscess; Cure.

(Under the care of Mr. CURLING.)

WE have lately seen a number of cases at the different hospitals, in which perineal section has been performed by various surgeons, amongst others by Mr. Cæsar Hawkins, Mr. Coulson, Mr. Fergusson, Mr. Birkett, Mr. Erichsen, Mr. Marshall, Mr. Stanley, Mr. Cock, and Mr. Curling. With very few exceptions, all appear to be doing very well. At the present moment there are four cases in the wards of King's College Hospital in which Mr. Fergusson has resorted to this operation, the last some three weeks ago; and although these were bad cases, they are progressing favourably. Now, we should like to insist upon a point of some importance in respect to the term of perineal section, and one that must be remembered by the surgeon: it is, that a very wide distinction must be drawn between the old operation of perineal section—which a hundred years ago excited less attention than it does now—and the one which Mr. Syme has introduced to the notice of the profession, and which goes by the name of "Syme's operation for external division of stricture," when performed in the manner recommended by him. We particularly mention this because many surgeons believe that the division of any stricture in the perinæum, whether upon the point of an instrument which passes only a certain distance, or otherwise, is Syme's operation. Now, Syme's operation consists in the actual introduction into the bladder of the staff which goes by his name, then dividing the strictured urethra upon the grooved portion of it, and then passing a catheter into the bladder. When, however, an instrument cannot be passed, from the presence of fistulous openings, false passages, tortuosities, obliteration of the canal, &c., the stricture is divided upon the end of an instrument which is ultimately got into the bladder, or upon a director in the perinæum itself, or without either, as circumstances may permit. This to be sure is perineal section, but not Syme's operation of external division. A very clear account of the operation, as performed by Mr. Syme, will be found at page 247 *et seq.* of Mr. Henry Thompson's excellent work, "On Stricture of the Urethra." Our readers would do well to read the 9th chapter of Mr. Thompson's book, which is

devoted to the treatment of stricture by external incisions. Some weeks back we saw Mr. Fergusson, at King's College Hospital, introduce a No. 2 silver catheter into the bladder, and divide a stricture upon this instrument, which contained a groove on its convex portion. If Syme's instrument had been introduced instead, then would it have been emphatically Syme's operation; the principle, however, is the same.

In the following case, of great interest, Mr. Curling performed Syme's operation with the best results, in a complicated stricture associated with fistulæ—that is, he got a Syme's staff into the bladder, and divided the stricture upon it in the perinæum. This was followed by an attack of orchitis, some ten days after (the patient was subject to this), with formation of abscess and a hernia testis. A complete cure, however, was accomplished. We also record an example of perineal section occurring at the Metropolitan Free Hospital, in which a Syme's staff could not be got into the bladder, and which is full of instruction and interest.

Wm. M——, a labourer aged forty-one, was admitted on the 29th of July, 1856, suffering from permanent stricture and a very thickened condition of the urethra, complicated with a fistula in perineo and a large false passage in the anterior half of the canal. He was under Mr. Curling's care six months previously, and was operated on for fistula. At that time, he could pass only a small stream of urine. Under the use of catheters, the stricture improved, and he became an out-patient. Catheterism was soon left off, and in about one month the stricture became much worse. This necessitated him to have recourse to a surgeon for assistance, and subsequently to apply for admission into the hospital. On admission, Mr. Wordsworth passed for him catheter No. 3. The urethra was enormously thickened and cartilaginous. This was followed by an abscess in the upper part of the scrotum on the right side, and another in the middle of the scrotum.

On the 25th of September, Syme's operation for perineal section was performed, when the urethra was laid open, and the thickened tissues very freely divided. There was still difficulty in passing an instrument, owing to the readiness with which it slipped into a false passage. The use of instruments was therefore abandoned for the present, in order to allow the false passage to close. In about ten days afterwards, a catheter was passed, and retained in the bladder. This was followed by a severe attack of orchitis, with great redness and tumefaction of the whole scrotum, which a fortnight after the operation terminated in abscess of the testis. This was laid open freely. The patient was much reduced, and had to be supported with wine. A "hernia testis" was then developed. This yielded to compression with dry lint and strapping, and the part closed in about three weeks. The man had been accustomed to have attacks of orchitis during the treatment by dilatation. Under suitable general treatment, his health and strength improved. A

No. 6 sound, and afterwards a No. 8, was passed about twice a week. The opening in the perinæum gradually healed; the false passage was also obliterated.

Nov. 28th.—He can now pass "a No. 8" easily for himself; the urine also passes easily, and in good stream; until last week, some passed through the perineal wound, but this has now healed, and he is in every respect doing well.

30th.—He was discharged, with directions to continue the use of a sound about twice a week for two or three months. His health was nearly reinstated.

METROPOLITAN FREE HOSPITAL.

Stricture of the Urethra for two Years Impermeable to Urine; great Induration about the Parts and numerous Fistulae; Operation; Recovery.

(Under the care of Mr. HUTCHINSON.)

THE following case is one of much instruction and interest, in respect to some of the modern modes of operating in stricture of the urethra. It will be seen in the narrative that it was one of the very worst class, in which the urethra was impermeable both to instruments and urine, whilst no fistula existed in the perinæum by which direct access to the bladder might have been obtained. Cases of impervious urethra in which direct perineal fistulae exist are, as all surgeons know, comparatively easy to relieve by operation. Both extremities of the urethral canal are readily found, and it is only necessary to divide the intervening structures and connect them. This may be done either by passing a director or small catheter through the fistula into the bladder, and retaining it there to serve as a guide after the incision of the perinæum has been made on the end of another instrument introduced by the penis up to the strictured or obliterated part, or it may be accomplished by the ingenious plan proposed by Mr. Syme, in his recent paper read before the Medico-Chirurgical Society. If, however, the fistulae have burrowed, and do not open in the perinæum, the case is wholly different. The surgeon has to cut through the indurated structures from before backwards, and seek, without a guide, for the proximal tract of the urethra, with a very considerable chance that he may not be able to find it, and that his operation, besides being prolonged, difficult, and bloody, may fail in its object. It may add to the interest of the narration for us to say, that we are authorized to state that the case is the one to which Mr. Hutchinson referred in the discussion on Mr. Syme's paper.

William B—, aged twenty-two, was admitted Aug. 27th, 1856. He was of dark complexion, thin, emaciated, and worn down by suffering. His aspect was that of hectic, but on examination it did not appear that he had any lung disease. He stated that he had been for five years the subject of stricture. Five years ago he had had a very intractable gonorrhœa, which left a gleet and some impediment in passing urine; but this did not distress him until about a year after-

wards, when he was knocked down in a street brawl, and violently and repeatedly kicked on the perinæum. After this injury he was confined to his bed by abscesses in the perinæum, which broke in several places, and left fistulae, through which urine flowed. For about two years after this the urine escaped in part by the penis, and in part by the sinuses, but subsequently it ceased altogether to come by the penis, and for two years before admission, according to his positive statement, he had never known any to escape from the meatus. He had been under various surgeons, and had been subjected to much instrumental treatment without avail. Abscesses had been repeatedly opened, but no attempt at division of the strictured tract had ever been made.

On admission, the whole perinæum and part of the scrotum were occupied by an enormous mass of most dense induration; the anterior border of this was easily felt around the urethra, just in front of the scrotum, where it presented an abrupt margin, and was nearly stone-like in hardness. No instrument, large or small, could be passed beyond this part, which was at a distance of about three inches from the meatus. The front of the scrotum and the anterior tract of the urethra being quite supple, the point of the instrument might be easily followed by the finger until it impinged upon the mass of induration. Three fistulae opened above the pubes, and one in the body of the penis; there were two or three others in the sides of the scrotum, and one close by the verge of the anus on the left side. Through all these urine escaped, and he believed that some also flowed into the bowel itself. The perinæum showed several large scars, but had no fistulae. The urine flowed away often involuntarily, and there was besides profuse discharge from several of the fistulae. The poor fellow's miserable state made him very anxious that something should be done, and he expressed himself as utterly regardless as to any risk to life which he incurred.

After many fruitless trials to pass the smallest instruments, both silver and flexible, it was determined to have the patient put under chloroform, and then try to introduce a small steel instrument, with the intention of cutting upon it, should the attempt succeed.

Operation, Sept. 22nd.—The man being under the full influence of chloroform, Mr. Hutchinson made a patient trial with Syme's shouldered staff, No. 0, but without success, as it could not be made to enter the induration. Having abandoned the attempt, however, one of his colleagues tried and succeeded with a No. 1 in passing it, as it was believed, into the bladder through the long-strictured tract. The instrument had now free lateral motion, as if its end were free in the bladder. The handle could not be much depressed, but this was well accounted for by the large mass of induration by which the root of the penis was fixed immovably. Examination was made by the rectum, but the surrounding induration was such as effectually to conceal the urethra from the finger. All present being convinced that the

instrument was really in the bladder, the operation was proceeded with. The scrotum being held forwards, an incision was made through its middle, so as to reach the shoulder of the staff just anterior to the induration, and from this point the knife was made to follow the groove downwards in a long deep cut. A further attempt was made to make the knife pass deeply towards the triangular ligament under the convexity of the staff; but an impediment being encountered, an examination was made, and it was found that the staff, instead of being in the urethra, was bent until its curve was lost, and passed in a direction almost straight downwards, through the great mass of indurated tissues, to the point of the rectum. In this dilemma the staff was of no further use, and was withdrawn: and the only resource left was to seek the posterior tract of the urethra without a guide. Carefully keeping to the median line, a free incision was carried downwards through this indurated mass almost as low as the bowel. Fortunately, in this, the dilated urethra behind the stricture was opened, and the first attempt with a large flexible catheter found it, and entered the bladder. This was retained as a guide, and a No. 8 being then passed through the penis into the wound, was carried along it into the bladder. The bleeding had been considerable, but nowise alarming, and it ceased without any need for plugging. The man was carried back to bed, and on recovering from the chloroform was in a very satisfactory condition.

The flexible catheter No. 8 was retained in the bladder for four days, when it accidentally slipped out, and could not be replaced. Two grains of quinine three times a day were given, from the second after the operation.

After the catheter had been removed, the urine flowed in part by the penis and in part by the wound. The first part of the urethra was frequently dilated by passing instruments; but although frequent attempts were made, these could never be got into the bladder, always hitching about the membranous tract, probably from the extreme irregularity of the canal and the number of sinuses about it. A great tendency to contraction at the anterior part of the wound was shown during the healing process, and it required the regular use of instruments to keep the canal open. The fistulæ one by one healed up, and the induration around them was in great measure absorbed. He was discharged from the hospital, stout and in good health, in the latter part of November, at which time all the fistulæ were soundly healed, the wound nearly so, and he was able to pass water in a good stream.

On the 2nd of January, the note states: He has now been at work (carrying flour) some weeks, and is strong and in good health. The wound is perfectly healed. He passes urine in good stream, and has complete control over the bladder. There is still much induration around the urethra, though the great bulk of it has been absorbed. The penis, however, is still fixed. There is much tendency to contract at the anterior part of the

diseased tract, and a No. 7 does not pass easily. There appears to be a pouch about the bulbous tract, and no instrument can be got into the bladder, though they easily pass so far as to seem close upon entering it. In passing urine, he places his hand on the perineum, to support the pouch alluded to, and help the stream forwards. He is directed to attend weekly, in order to have instruments passed.

Amongst the points to which we would advert as of especial interest in the above case are—

1. The strong testimony which the result of the case bears in favour of dividing the perineum in cases of bad stricture.

2. The small amount of risk from hæmorrhage which there is, even in the freest incisions, provided they be carefully kept in the median line.

3. The risk of using a solid staff, in cases in which doubt may occur as to whether the instrument is or is not really in the bladder. Had the staff used been a catheter also, such as we have seen Mr. Fergusson employ, the error could not have been fallen into.

Mr. Hutchinson remarked after it, that in cases in which, with indirect fistulæ, the stricture was impassable, he should incline to pass by one of the fistulæ a flexible catheter, which probably might be made to find its way into the bladder through the most sinuous track, and to retain this during the operation to serve as a guide by which to find the proximal part of the urethra, after the anterior part had been opened. The fistula itself would, of course, not be laid open in such an operation.

WESTMINSTER HOSPITAL.

Three Cases of Pneumonia, treated by Diaphoretics, Wine, and Anodynes when necessary; Recovery.

(Under the care of Dr. FINCHAM.)

WE to-day give some examples of this affection in an uncomplicated form, and we do so for the purpose of illustrating the treatment at our different hospitals. It will be seen how little venesection is resorted to; in fact we seldom or never see a case requiring its use in London, although it may be necessary in the strong and robust in country districts. Of course cupping occasionally is quite essential. One of the striking features in the treatment is, supporting the strength by wine, brandy, and beef-tea; better recoveries are made under such circumstances. We feel sure every physician must remember the long and tedious convalescence which followed the old plan of evacuating, in some instances, nearly all the blood in the body, and then keeping the poor patient at death's door by large doses of tartar emetic.

The symptoms of the disease were well marked in the following three cases, and appeared to be confined solely to the lung tissue, the pleura not appearing to be engaged.

Pneumonia of the right lung; recovery.—T. W—, aged forty-three, a cutler, was admitted Jan. 5th, 1856. Symptoms on admission: Cough, with scanty expectoration of tenacious mucus;

pain in the right mammary region, extending round to the back; skin of moderate warmth; pulse 100, of good strength; respirations rapid; tongue covered with a pasty white fur; thirst; loss of appetite and sleep.—Physical signs: Faint tubular breathing audible behind the right suprapinnous fossa; no morbid sounds or deficient resonance elsewhere.—History: The day before admission he was seized with shivering, and at the same time with sudden severe pain in the right side of the chest, increased by inspiration; these symptoms were followed by those already mentioned. Reported to have previously enjoyed good health, with the exception of occasional "coughs and colds."—To have eight leeches to the right side, and afterwards a large linseed poultice; one grain of opium and three of calomel now and at bed-time; and three drachms of the liquor ammonia acetatis, two of nitric ether, one scruple of bicarbonate of potash in an ounce of camphor mixture, every four hours. Strong beef-tea.

Jan. 6th.—Relieved by the leeches; but had much cough, and still complained of pain. Tubular breathing more distinct than yesterday, and in the same situation; no crepitation audible elsewhere.

7th.—General symptoms not altered; marked tubular breathing, voice, and cough in suprapinnous fossa; expectoration moderate in quantity, tenacious, and exhibiting, for the first time, an apricot hue. Oil of turpentine to be applied to the right side.

8th.—Passed a restless night; expectoration of a more marked apricot hue, and in parts streaked with blood. An eruption of herpes showed itself the evening previous on lips. Physical signs as yesterday. To have twenty-five minims of chloric ether; three drachms of liquor ammonia acetatis in one ounce of camphor mixture, every four hours; and six ounces of wine.

9th.—Was very delirious and restless during the night. Pulse 100, less strength; tongue inclined to be dry; tubular breathing; voice and cough audible over the whole scapular region, and for an inch below; no crepitation anywhere to be heard. Ordered, chloric ether, half a drachm; carbonate of ammonia, seven grains; tincture of serpentaria, one drachm; water, ten drachms: every four hours; and six ounces of brandy.

10th.—Was extremely restless and delirious during the night, so as to require forcible confinement in bed. A full dose of Battley's sedative solution was administered (one fluid drachm) at eleven P.M.; and since that time had dozed at intervals. Pulse 108, weak; countenance anxious; tongue pasty and dry. Took the brandy, but very little nourishment all yesterday. Physical signs as at last report. Continue the mixture: half a drachm of Battley's sedative solution at the hour of sleep; and eight ounces of brandy.

This patient left the hospital at his own desire the same day. He was visited, however, at his home by one of the pupils, and the same plan of treatment pursued. He recovered perfectly.

2. *Pneumonia of the left lung; recovery.*—

H. B.—, aged eighteen, a bootmaker, admitted August 26th, 1856. With other symptoms, on admission, he complained of dull pain in the left side of the chest, increased by inspiration and on coughing; expectorated some tenacious mucus, streaked with a small quantity of blood. The lower two-thirds of the left lung were dull on percussion, with tubular breathing, voice, and cough, moderately fine crepitation being audible at the end of a deep inspiration.—History: He had previously been in the enjoyment of good health. On the 18th he was seized with shivering and pain in the left side, followed by cough and general feverish symptoms; and on the 20th, he observed his expectoration tinged with blood. He appeared from his account to have got gradually worse, until two days before admission, when the symptoms, especially the pain in the side, began to yield; had had no medical treatment before he came into the hospital.

The treatment pursued was a blister to the side, a diaphoretic mixture, and calomel, three grains, and one of opium, at bed-time. He progressed favourably and rapidly, and was discharged well from the hospital on the 16th of September. The diaphoretic mixture was continued for a few days after admission, with beef-tea; and, subsequently, a light tonic, with a moderate amount of meat, and a few ounces of wine.

3. *Pneumonia of the right lung; recovery.*—

C. E.—, aged sixty-three, a draper, admitted on the 19th of November, 1856, with the usual symptoms. The physical signs were: the breathing on the right side of the chest was throughout somewhat feebler than on the other, but neither crepitation nor tubular breathing could be heard; heart's sounds healthy. History: On the 16th, had a rigor so violent that he thought he had a fit of ague, from an attack of which he had suffered a few years before. This was accompanied with bilious vomiting, lassitude, and pains in the limbs, and was soon followed by cough, pain in the side, and general feverish symptoms. His health was reported to have been previously very good. Ordered a diaphoretic and antimonial mixture, and oil of turpentine to the right side.

20th.—Aspect worse; skin hotter; pulse 100, not weak; respirations 40; tongue clammy, and covered with brown fur; slept very badly; coughed more, and expectorated scanty, tenacious mucus, of a deep apricot hue, and in parts more distinctly streaked with blood; urine as yesterday; bowels not open. Physical signs: Dulness, but not to a marked degree, over the upper third of the right lung, both before and behind, in which situations crepitation of a moderate size was audible, but no fine pneumonic crackling. At the base of the same lung, the breathing was feeble, and mixed with scanty, moist râles. Puerile breathing was audible over the whole of the left lung. To be cupped to eight ounces on the right side.

21st.—The pain in the right side and the general symptoms were somewhat ameliorated, whilst the physical signs were more developed; there was marked dulness in front from clavicle to

mamma, and in this situation unequivocal pneumonic crepitus was audible; behind, over the upper half of the lung, there was also dullness, with crepitation of a less fine character; at the base, coarser crepitation, more abundant than yesterday. He was again cupped to six ounces, and the antimony wine in his mixture increased to two drachms every four hours.

There was no improvement for three days, when the physical signs became improved, the dullness being less, and vesicular breathing being mingled with the crepitation. On the 22nd, he took ten ounces of wine, increased to thirteen on the 24th. He had had much delirium, but finally slept from morphine. He recovered speedily and perfectly.

ST. MARY'S HOSPITAL.

Laceration of the Arm and Forearm; Refusal of the Patient to allow Removal of the Limb; Rapid Development of Mortification; Favourable Result.

(Under the care of Mr. HAYNES WALTON.)

THE patient, thirty-two years old, was engaged in tunnel work on the London and North-Western Railway, when, by the giving way of some of the supports, he was nearly covered with earth and building material. He was brought to the hospital in an hour after the accident. Just below the axilla on the inner side of the left arm the skin was cut through transversely half the diameter of the limb, and separated above and below for some inches from its attachments. The muscles surrounding the humerus, except a small portion of the outer part of the triceps, were torn across, and the bone was stripped of its periosteum nearly in the circumference. The brachial vessels were entirely severed; the large nerves were not divided, but bare, as if they had been dissected. About the middle of the front of the forearm, the superficial layer of muscles and the skin over them were much lacerated. Mr. Walton did not hesitate, after a careful examination, to recommend amputation, as he thought mortification inevitable. However, the man would not consent, and the wounds were brought together, and the limb wrapped in cotton-wool.

It is remarkable that the temperature of the finger and of the forearm was never lost; the movements also of the fingers and of the wrist were scarcely impaired. On the next day, just twenty-four hours later, the patient expressed his willingness to submit to anything that he was advised. The parts now were even at a higher temperature than natural. Severe constitutional symptoms had set in, and the tongue was brown and dry. Mr. Walton determined to take the opinions of his colleagues on the case, although he was, he said, more than ever convinced of the propriety of amputating, because the cellular tissue of the limb was getting much infiltrated, and the laceration on the forearm actually emitted a putrid gangrenous odour. An operation was agreed on, and Mr. Walton amputated close to the shoulder-joint.

A dissection proved that the superior profunda artery was not injured. It was therefore by this and the cutaneous circulation that the temperature was maintained in so marvellous a manner, even to the tips of the fingers.

A marked improvement followed the operation. The stump united by the first intention, and the patient is nearly now convalescent. We have no doubt in our minds that the integrity of the nerves in the present instance went a great way towards keeping up the temperature of the limb—an opinion in which Mr. Walton fully concurs.

ROYAL FREE HOSPITAL.

Outline of two Cases of Pneumonia, treated successfully without Bleeding, Tartar Emetic, or other Means of Depletion.

(Under the care of Dr. HARRALL.)

THE following cases were treated with wine in small quantity almost from the onset; the physical signs were well marked, and although there was great debility and prostration in the first one, recovery was speedy and satisfactory. We have been favoured with the notes of them by Mr. W. Curran, house-surgeon to the hospital.

Frederick A.—, aged thirty, artist, of French parentage; weakly looking; countenance flushed, anxious, and imploring; pulse 116; respirations 42; voice feeble and whispering.—History: He generally lives well, and is temperate in his habits. Not of very strong health, and liable to catch cold, and suffer from its usual concomitants, on any exposure. About a week previous to admission, while returning at a late hour, per boat, from Greenwich, he became chilly; he had a rigor and perspired very freely the same night. These were succeeded by hoarseness, cough, and frontal aching, and on the following night, after sweating profusely for some hours, he was suddenly seized with a most severe pungent pain in the left side, for which he was ordered eight leeches; these bled so freely that, when he presented himself at the hospital, he was unable to stand or support himself for a moment; he spoke in a faltering, tremulous voice; was flushed and giddy, and so entirely prostrate as to require being assisted by others to bed. A detail of the auscultatory sounds would be tedious and uninteresting; suffice it to say that the characteristic crepitation of pneumonia, but of a coarser type and more circumscribed than usual, was heard at the left base posteriorly; there was some ill-defined friction-rubbing in the axilla and near the mamma, and copious liquid sub-crepitant rhonchus between the scapulae, on the same side. The breathing on the right side was markedly noisy, tubular, wheezing; the voice somewhat increased in both sides, disposed to oegophony on left; expectoration thick, glutinous, and tinged with fluid, tracheal streaks. He was ordered a large blister behind the leech-bites; turpentine in front. To have three ounces of port wine, and a mixture containing as chief ingredients carbonate of ammonia and paregoric.

He was subsequently brought under the influence of mercury very slightly, and, when the active symptoms had subsided, put on small doses of morphia and ether, to relieve cough and irritation. Pudding, nutritious diet, and stout were simultaneously allowed, and he was discharged in less than three weeks from admission, so well in every respect as to be able to undertake some portraits with which he was entrusted.

John H——, labourer, aged twenty-four, single; a small, thick-set, pasty-looking person, of dull, sombre aspect, phlegmatic temperament, and strumous tendency. He had never been ill until within the last two months, when he caught a cold, had pains in the joints, was sore all over, and obliged to take to bed. While in the recumbent position a friend of his sat on his flexed knee, and this caused so much irritation and swelling as to require twenty-four leeches, fomentations, and other local measures, in another hospital, from which, after seven weeks' residence, he was discharged, at his own desire, and then came as an out-patient to this hospital.

When first seen, he complained of stiffness, deformity, and lumps in all the joints, especially those of the knee and fingers; catching of the breath, persistent pain on the left side, palpitation, and fluttering; and, on closer examination, the lung symptoms were found to be such as to require his immediate admission; there being prominent pain on inspiration, motion, or costal pressure; dulness increasing towards, and almost absolute at, base, with copious humid crepitation of redux type, some pleural rubbing in the axilla of the same side, and pectoriloquous shrillness of voice—tone at the very angle of the scapula. The heart's sounds were rough, and tumultuous, and followed by, in less than twenty hours, loud to-and-fro pericardial friction murmur, which became diffused over the front of the chest, and greatly obscured pulmonary symptoms on that aspect.

After the usual adjuncts of calomel and blisters had tranquillized the heart and diminished the urgency of the other symptoms, he was put on small doses of blue pill and the alterative mixture of the hospital—namely, iodide of potassium and sarsaparilla, and these, with cod-liver oil and nourishing diet, so far modified the lung derangement and influenced the other symptoms, as to enable him to leave the hospital and resume his ordinary advocations in less than three weeks after admission.

ST. GEORGE'S HOSPITAL.

Improved Lamp for Calomel Fumigation in the Treatment of various forms of Syphilitic Affections.

(Employed by Mr. POLLOCK.)

In the last volume of the "Transactions of the Medico-Chirurgical Society" will be found a paper by Mr. Henry Lee, in which he has drawn attention to the advantages of calomel fumigation in the treatment of syphilitic affections, and he has, we think, shown that greater advantages are

obtained by the application of calomel-vapour to the surface of the body, than by any other form of mercurial application; especially as compared with the old plan of mercurial fumigation, as adopted by Pearson and others.

Mr. Lee, in his experiments found that the efficacy of the calomel-fumes was considerably enhanced when combined with the vapour of hot water, and that the combination of the two vapours acted more readily than when the calomel was alone used. For this purpose two lamps were used at first,—one to volatilize the calomel, the other for the purpose of boiling water; for it was necessary to obtain a greater heat than the boiling-point of water to volatilize the calomel. The two lamps were found to answer the purpose most efficiently, but the cost of such apparatus placed it beyond the means of many who might otherwise be willing to adopt the treatment; and it was therefore desirable, if the efficacy of the proposal was not interfered with, that the combination of the two effects should be produced by one lamp, thus economizing the spirit consumed and rendering the apparatus cheaper. We can now present to our readers a lamp which has been perfected for this purpose by Mr. Blaise, instrument-maker, of St. James's-street, from a proposal by Mr. Pollock, of St. George's Hospital.



and with the consent of Mr. H. Lee. It consists of a circular perforated stand with a handle, and an opening in front which permits of the drawing out of a small spirit-lamp with a large wick, which, when lit, throws the flame on a circular saucer containing water, with a perforated concavity holding a smaller hollow metal plate or central saucer, upon which is placed the calomel. The effect of the heat is to boil the water and volatilize the calomel, which we performed ourselves very satisfactorily. The drawing gives a correct and faithful idea of the lamp, which rests upon three feet. The large saucer is made of a single piece of metal, and is lined with galvanized copper. Ten grains of calomel, the dose to be volatilized, placed on the central saucer, require about fifteen minutes to be converted entirely into va-

pour, after the spirit-lamp is lighted. The quantity of spirit necessary to obtain this object is measured by the tin cap which fits the lamp. Hot water placed in the outer saucer will evaporate in the time required to volatilize the calomel.

The lamp may be used every night or every other night. The patient sits naked on a chair, surrounded by a cloak, with the lamp lighted under the chair or between the legs.

The advantages of the combination of the calomel-vapour and steam appear very decided. The action of the calomel-vapour alone might suffice in the treatment of syphilitic diseases; but its action is rendered in many respects so much more efficient by the addition of hot steam, that there can be no choice between the two plans of treatment. More than this: Mr. Pollock has suggested that the heat of the steam is absolutely necessary to enable the patient to sit naked in a room, with any degree of comfort, with merely a cloak thrown loosely over the body, while undergoing the fumigation for a quarter of an hour; otherwise the patient is cold and uncomfortable. By the addition of the hot vapour of water the action of the skin is very much increased and the patient's comfort materially added to. It will be observed too, that as the fumes of the calomel are surrounded by the vapour from the water during the volatilization, they are, in all probability, more effectually mingled with the vapour-cloud rising from the water, and more readily and surely carried and applied to the surface of the body, than under the plan of using two lamps. This lamp is now being used by Mr. Lee in the Lock Hospital and by Mr. Pollock at St. George's, and we hope shortly to be able to give the results of several cases under treatment. At this moment there is a very marked case of tertiary syphilis in a female in King's College Hospital, which Mr. Lee was good enough to show us, and the effects of this plan of treatment have in a very short space of time, proved most gratifying.

Mr. Pollock finds that this lamp may be made useful in private practice for sulphur fumigation, as well as for the calomel treatment; and it may, perhaps, also be adapted for the volatilization of other substances, such as iodine, &c.

The lamp and cloak are to be obtained at Messrs. Whicker and Blaise's, St. James's-street, at a moderate price.

Stone in the Bladder, in an elderly Man, with Enlargement of the Prostate Gland; Lithotomy; Removal of two Stones and Excision of the middle Lobe of the Prostate.

(Under the care of Mr. FERGUSON.)

WE have, within the past few months, seen several cases of stone at the different hospitals, in which lithotomy was performed; some of them possessed slight features of interest, whilst others, again, did not differ in any material point from what is ordinarily met with. Last Saturday, however, a very unusual and striking case presented itself to our notice at this hospital, which

demands more than a passing notice at our hands. Every practical surgeon is aware that one of the obstacles to the easy performance of lithotomy as well as lithotripsy is enlargement of the prostate. If this enlargement is considerable, it is sometimes a cause of difficulty and annoyance in inexperienced hands. But with the most experienced it often interferes with the process of laying hold of the stone. On this important point Mr. Coulson remarks, in his work on Lithotomy: "But the great obstacle which considerable enlargement of the prostate causes is to seizing the stone. It places the calculus beyond the reach of the finger, and a sure guide to the position of the foreign body in the bladder is thus lost; while the distance of the vesical cavity from the external surface is greatly increased. Besides this, the enlarged gland, raising up with it the neck of the bladder, leaves behind it a depression or artificial cavity, in which the stone becomes lodged, and easily escapes being detected by the sound or seized with the forceps."—p. 194.

Mr. Fergusson's patient was the analogue of this peculiarity; he was a stout, florid, healthy-looking man, aged fifty-nine years, the subject of stone for some years, who had been sent, ten days before, from the country, with some symptoms of disease of the bladder, especially great irritability. A stone was detected, and some enlargement of the prostate gland. It was determined to relieve him by the operation of lithotomy, as it was believed that lithotripsy would produce more suffering, from the irritable state of the bladder, and at the same time the fragments could not be easily broken, from the state of the prostate. Moreover, it was suspected that there was more than one stone.

Accordingly, on the 11th inst., the man was brought into the theatre, and given the vapour of amylene, when Mr. Fergusson proceeded to perform his usual operation. Before doing so, as is his custom, he passed a staff into the bladder, to make sure of the presence of the stone; he failed to touch it; he then passed in a short sound, and readily detected it. Having completed the operation up to the point when his left forefinger was in the bladder, he withdrew his finger, and introduced the forceps. The gush of urine took place, but the stone did not tumble within their jaws, as we have often seen in Mr. Fergusson's operations. He did not catch the stone in his usual manner, it eluded his grasp, and he could not get it. It lay in a hollow behind the enlarged middle lobe of the prostate, which formed an obstacle to its being seized with the forceps. He, however, succeeded in removing two irregular-shaped calculi from this hollow, with sharp angles, one of a blackish colour. He then introduced a pair of small stone forceps, laid hold of the projecting lobe of the prostate, and cut it off on a level with the verumontanum, with a probe-pointed bistoury. This lobe was the size of a small walnut, and had an ulcerated fungus at its apex. The rectum was then injected with some lard and opium, and the patient was removed to his bed,

very little blood, indeed, having been lost at the operation, which from first to last did not occupy any longer time than in any other of Mr. Ferguson's cases.

In some observations which were then made, he stated that the present was one of the most remarkable cases which had ever occurred to himself, from the obstacle which prevented his first getting the stone, which he described as an unusual enlargement of the middle lobe of the prostate. In the whole course of his experience he had not before met with such an obstruction, the stone lying behind and below it in a sort of pouch or cavity. This accounted for one of the symptoms which had annoyed this man—namely, great difficulty in getting rid of his urine. He believed the prostate caused this, but he was not prepared to find such a large tumour as was here developed. If he had rested content with merely taking out the calculi, the relief would have been only partial, and he thought of doing what had never been done before, and that was to cut away the middle lobe. He had on several occasions, he said, taken away a portion of the prostate which had projected through the wound. But here the prostate was prominent, not lacerated, and it struck him it would be as well to remove it, which he did quite readily with a small stone forceps, and a probe-pointed bistoury. This, of course, increases the danger of the patient, but it gives him a chance of future comfort in the event of recovery. The case was most certainly an isolated one, and it is left for experience to say whether the treatment adopted was a correct proceeding.

UNIVERSITY COLLEGE HOSPITAL.

Stricture of the Urethra, for Eight Years, with False Passages; Treatment by Perineal Section, with a Modification of Syme's Staff; Recovery.

(Under the care of Mr. MARSHALL.)

C. E—, a man thirty years of age, formerly a tailor, but of late a librarian in a small town, of a very short stature, rather stoutly built, pallid in appearance, flabby in muscular fibre, and having a premature tendency to obesity, had laboured under symptoms of stricture of the urethra for nearly eight years, apparently originating in previous gonorrhoea. He had suffered occasional attacks of retention, for which catheterism had been employed. During the last year and a half the size of the stricture had diminished gradually, and latterly the urine generally dribbled, very seldom passing in a continuous jet. No instruments had been used for two months previous to his coming to London, but before that time considerable difficulty had been encountered in their introduction; serious hæmorrhage had ensued, and the stricture had not yielded in any degree.

When admitted into the Hospital a short time before Christmas, it was observed that the dimensions of the penis were unusually large, the erectile tissues being distended, but at the same time very lax. There was induration along the urethra, extending about an inch and a half behind the scro-

tum. There was narrowing at that point, but the most constricted part was six and a half inches down the canal, probably corresponding with about five inches, or five and a half, in an ordinary-sized penis. Through this, even a No. 1 catheter could not be passed. In spite of rest, a non-stimulant diet, and the administration of alkalis the most patient trials, extending over a few weeks failed in enabling anything larger than a fine catgut bougie, about one-third the diameter of a No. 1 catheter, to be passed into the bladder. On one occasion, the instrument being retained a few hours, a temporary increase in the size of the stream of urine was the result, but the stricture speedily returned to its previous condition.

No impression being likely to be made upon the disease by dilatation, the urine being healthy and the habits of the patient temperate, an operation was determined on; and accordingly on the 6th of January, Mr. Marshall proceeded as follows: The finest Syme's staff was passed into the stricture as far as possible, and the urethra divided upon it for about an inch or more in extent; an attempt was then made, by a further careful incision, to open the urethra behind the stricture; but neither could the staff be passed on into the bladder, nor could a director be introduced into it from the wound on the perinæum. A No. 6 catheter now easily reached the wound, but its point could not be guided on into the bladder; a No. 1 catheter, however, introduced through the penis, easily slid into that organ. Upon this instrument the posterior part of the urethra was divided a little further back, and the catheter could then be moved pretty freely backwards and forwards; and, under all the circumstances, it was deemed more prudent to leave it in the bladder, and attend carefully to its being kept permeable to urine, than to incur the risk of difficulty of passing a larger instrument, after withdrawing the smaller one. Such was the length of the penis, the depth of the perinæum, and the high position of the bladder, that the rings at the top of the catheter rested against the orifice of the urethra.

At the operation there was moderately free hæmorrhage from the very loosed and relaxed erectile tissues, and a recurrence of this took in the evening. The patient suffered much from the effects of chloroform. The catheter, which acted well, was withdrawn after forty hours. On the third day the patient had three attacks of rigor, but was relieved by the warm bath. Subsequently, though weakened by the operation, he had no other bad symptoms.

On the sixth day, Nos. 3, 4, and 6 silver catheters were passed in succession into the bladder; but on the next occasion, one week afterwards, only No. 2 would reach that organ, unless indeed force sufficient to cause dilatation of the parts had been used. The urine from the first had flowed with great celerity through the wound, showing that the part of the urethra behind the perineal incision had been sufficiently freely divided. At the end of a month, the urine still flowed quickly by the wound, though this was nearly closed. The

stream through the penis was small. It was evident that the canal in front of the wound was again contracting, and it was resolved to divide this part in a second operation, rather than dilate it. At this period, however, it was only by patient manoeuvring at first with the handle of the instrument turned downwards and then upwards, that a No. 2 catheter could be passed into the bladder. The urethra was unusually long, the canal was irregular and much deflected at the stricture; there were undoubtedly several false passages, and beyond the seat of the former incision it was very difficult to hit the urethral canal. Owing to these circumstances, it was found impossible with a Syme's staff, when the shoulder of the thick part or stem was arrested at the stricture, to feel at all certain as to the point being engaged in the right passage further on.

To meet this difficulty in the case, Mr. Marshall conceived the idea of employing a modified Syme's staff, having the thick part movable on the finer grooved portion; and it was at once seen that the latter might also be made to serve as a guide to the subsequent introduction of the catheter intended to be temporarily retained in the bladder. The instrument represented and described below was accordingly constructed.

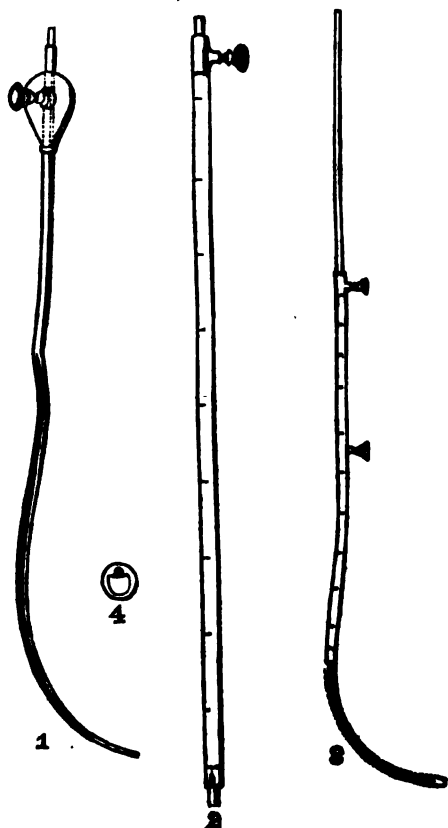


Figure 1 represents a narrow grooved steel staff, having the diameter of a No. 2. catheter but the curve of a medium-sized Liston's lithotomy staff. The groove extends high up on the stem, but does not reach within an inch of the

point of the instrument, and thus does not interfere with the perfectly cylindrical form of its termination. Above the groove the corresponding surface of the staff is flat, so that the section of the instrument, except near the point, is plano-convex. At its upper end projects a short male screw, and it is provided with a broad handle, which can be fixed or removed at pleasure. Figure 2 consists of two parts. One of these is a straight vertical piece of steel, of the same diameter and sectional form as the grooved staff, figure 1, and is tapped with a female screw at its lower end. The other part is a No. 8 gum-elastic catheter, marked in inches, and fixed for the time upon the central part by a lateral binding screw at its upper end. Its lower end is provided with a silver mount, the perforation through which, shown of the full size in figure 4, is accurately adapted to the plano-convex surfaces of the central part, so that it cannot turn or twist. Opposite the plane edge of the mount is a notch or short groove extending a short distance upwards from its point.

In using this instrument, the staff, figure 1, is first introduced and ascertained by the freedom of its point to be really in the bladder, from which indeed it is not to be withdrawn until the final stage of the operation. Thus placed, its handle is removed, and the central part of figure 2, carrying the outer gum-elastic portion, is screwed into its projecting end, so that the two steel parts become continuous, and have their plane surfaces turned in the same direction. The binding screw near the top of the gum-elastic catheter being loosened, this latter is made to travel down upon the staff, along the urethra, till it meets the stricture, at whatever point this may be seated. Owing to the accurate fitting of the lower silver mount to the half flat, and half round surface of the staff, the little notch upon it comes to correspond with the groove in the latter; and by now tightening the binding screw at the upper end, a compound staff is formed, resembling in principle Mr. Syme's, but having its point necessarily within the bladder, and, owing to its strong curve, projecting well in the perineum. Figure 3 shows the instrument as put together.

The division of the stricture being accomplished in the usual manner, the gum-elastic catheter is passed on towards the bladder, sliding upon the curved staff as indicated by the dotted lines in figure 3, and any remaining stricture is thus readily detected and divided by the further use of the knife. Then the elastic part is completely withdrawn over the now continuous central staff, and upon this, which is still retained in the bladder, the catheter intended to be retained for a time in that organ is without difficulty or delay readily introduced. This catheter, of gum-elastic material, has a lateral as well as a terminal aperture, to allow of the free passage of urine; it is also provided with a soft metal stilette, which gives it the necessary amount of stability, and at the same time acts as a plug.

On the 12th of February, the patient, C. E—,

being in a favourable condition, was operated on by Mr. Marshall, who used the instrument above described for the first time. With careful manoeuvring, the narrow grooved staff was introduced into the bladder, and the subsequent steps of the proceeding were carried out. Repeated touches of the knife were necessary to divide the exceedingly tough substance of the strictured canal in the direction of the scrotum. As at the first operation, and indeed after the passing of catheters long previously, there was rather free hæmorrhage. This being thoroughly divided, the elastic portion slid on into the bladder, and being then withdrawn, its place was with perfect facility supplied by the permanent catheter. Owing to the adhesiveness of the new gum-elastic, some force was needed in order to remove the central steel staff. Finally, the metal stilette was introduced, and the catheter tied in, in the ordinary way.

The patient, who had not taken chloroform, had no rigors, and was altogether better than after the first operation. The catheter was retained *in situ* only about twenty-eight hours. On the fourth day, Nos. 7 and 8 silver catheters were passed very easily. On the seventh day, Nos. 8 and 9, and on subsequent occasions No. 9 only. At the present date, the sixteenth day after the operation, the perineal wound is reduced to a mere pin-hole. The urine passes entirely through the penis, and the final result of the case is no longer doubtful.

In some remarks after the operation, Mr. Marshall explained the objects of the instrument, and observed, that although he had hitherto exclusively used Mr. Syme's staff in performing perineal section, he submitted that the modification of it with a movable shoulder, as then exhibited, might be useful in some cases, and, serving also as a certain guide to the subsequent introduction of the catheter, might save much vexatious delay in others.

Provincial Hospital Reports.

ROYAL INFIRMARY, LIVERPOOL.

(Communicated by JOSEPH ALLAN, Esq., M.R.C.S., L.S.A., Junior House Surgeon to the Infirmary.)

THE following case of death whilst under the influence of chloroform occurred on Sunday morning, the 5th inst., at this Infirmary.

T. N.—, aged thirty-five, a labourer, of intemperate habits, thin, with somewhat sallow countenance and anxious expression, was admitted March 18th, under the care of Mr. Edward R. Bickersteth, with an aneurism of about four weeks' standing in the left popliteal space. It was determined to ligature the femoral artery, which was accordingly done on the 31st of March, without any difficulty, the patient being under the influence of chloroform. The same afternoon he complained of great pain in the limb and numbness; in the evening the foot became cold, and

the next morning it was evident that gangrene of the limb had commenced. On the 4th inst., four days after the operation, it was decided after consultation, to amputate the limb. Accordingly about 11 A.M. on the 5th, I proceeded to give the chloroform in the ward; that employed was Duncan and Flockhart's, specific gravity, 1.497. It was poured on a piece of lint, which was then held at a short distance from the nose and mouth. The patient took it readily, and appeared to come under its influence more quickly than on the previous occasion. There was a short period of excitement, with some struggling, but no congestion of the face of any note, and he soon passed into a stertorous condition, taking deep inspirations, the expirations being short. In about ten or twelve seconds more he was completely under the influence; breathing tranquil, conjunctivæ insensible. The quantity of chloroform was not measured, but he had taken about one drachm and a half, certainly not more than two drachms. The whole time occupied in giving chloroform in the ward was about five or six minutes from its first commencement.

He was now removed on a stretcher to the operating theatre, and placed on the table. About two minutes would thus elapse, during which time no chloroform was inhaled. He had slightly recovered from its effects and was breathing tranquilly and freely; pulse weak, not much affected by the inhalation. About half a drachm of chloroform was now poured on some lint, which was held to the nostrils, and he then became fully under the influence; respiration good; pulse frequent, feeble. The operation was about to be commenced, and I was pouring about twenty minima more chloroform on the lint (having pronounced the patient to be in a fit state), so as to be ready to give him some more as occasion required, but had not applied it, when, turning round, I noticed something peculiar in his general appearance, and, on lifting up the eyelid, found the pupil dilated, and the lid did not close over on the removal of the finger; the eyes were slightly turned up. I at once felt for the temporal artery, but there was no pulsation, and none detected at the left wrist; the respirations had almost ceased. The head was lowered, cold water was dashed on the face, and the abdomen struck with the palm of the hand; the finger thrust into the mouth (there was no action of the heart felt), the legs were elevated, and a wet towel was dabbed over the epigastrium. After one or two blows the respirations now became better and seemed good, and in about two minutes a pulse was felt at the wrist. This continued between two and three minutes, the respiration being good. His pulse then began to fail, and in about a minute more the respirations were less. The tongue was seized with a pair of forceps, and drawn forwards, and artificial respiration tried, and ammonia held to the nostrils; but he was becoming livid in the face, so the Ready Method was at once adopted, and this produced apparently a few natural respirations. But the pulse had gone, and in about two minutes more

there was no breathing save artificial. About the time that the pulse stopped, there was a convulsive movement of the muscles of the leg, and a slight clamminess of the skin succeeded. The Ready Method was continued for half an hour, and galvanism tried, but without avail. From the time he was placed on the table to his death, or the cessation of natural respiration, about ten minutes elapsed.

Autopsy, twenty-five hours after death.—Post-mortem rigidity remaining. On opening the skull the vessels of the dura mater contained fluid blood, but were not disturbed; the blood soon coagulated on exposure to the air. Some little fluid in a few of the subarachnoid spaces. Brain healthy, tolerably firm, and pale; medulla oblongata and upper part of spinal cord healthy and firm. On opening the chest the lungs were slightly collapsed; pleura healthy; pericardium contained normal amount of clear serum; on parietal layer were several white patches, especially posteriorly. Heart: of natural size; right side flabby; left side contracted, but not firmly; right auricle and ventricle both contained some fluid blood (which afterwards coagulated on exposure), and a small soft clot; valves healthy; left auricle and ventricle contained some fluid blood and a small coagulum, but all the cavities were comparatively empty; the walls of the right ventricle were thin, and the muscular tissue of this and the left ventricle had a dingy, unhealthy look, and very readily tore. Under the microscope no oil-globules were detected; the fibres, however, were not well marked, and in many the true muscular tissue appeared to be wanting, its place being supplied by condensed cellular tissue. Pulmonary arteries contained coagula. Lungs: healthy, but tissue compressed; emphysematous towards free margins; no congestion of any note. Bronchi healthy. Liver: rather larger than natural; had a rotten, oily look; and on examination under the microscope numerous oil-globules were seen. Gall bladder healthy. Spleen: very pulpy and soft, but of natural size. Kidneys: left, small, from arrest of development, but healthy; right, healthy, but congested. Aorta: both thoracic and abdominal coats healthy. Vena cava: somewhat distended; healthy. Stomach and intestines: pale, but healthy. Blood: nothing particular noted about it.

Remarks.—The chloroform was administered in this case in the same way as I have been constantly in the habit of giving it to other patients,—viz. in small doses of about half a drachm or less at a time, on a piece of lint, so as to bring the patient *gradually* under its influence, and whenever any struggling or any congestion of the face, &c., takes place, suspending it for awhile, or giving it diluted with a *large* quantity of air; so, also, whenever the breathing becomes stertorous. This patient, on the previous occasion, took a much larger quantity of chloroform, and there was a good deal of excitement produced and stertorous breathing, before he became *fully* under the influence, but he soon recovered from the

effects, so that it had constantly to be kept up. He had no bad symptoms attributable to the chloroform afterwards.

He apparently sank from syncope, or cessation of the heart's action, for his respiration had been good just before he changed, and it continued for a second or two, though faint, when the pulse had stopped; and after the respiration had been restored, and was pretty good, the pulse was very feeble, and ceased two minutes before the respiration. The Ready Method acted very well; and if the sinking had been due to the respiratory system, it would have in all probability averted the melancholy event. The post-mortem appearances bear out this view—viz. of death from syncope, from the little blood found in the cavities of the heart, and the absence of congestion of any organ, so frequently noticed in these cases of death from chloroform; in fact, there appeared to be no excess of blood in the whole system. What, then, was the cause of the syncope? Was it the chloroform? This it is impossible to answer for certain. Doubtless the chloroform would have the tendency to produce it; and being under the influence of chloroform, it was more difficult to rouse the patient; in addition to which the muscular structure of the heart was not healthy. We have, moreover, to consider that the patient had only a few days before undergone an operation, and was suffering from gangrene. Yet, notwithstanding, I believe there is only one conclusion to be drawn—viz. that he died from the effects of the chloroform.

As to the treatment: as the patient was unable to swallow any brandy, the application of ammonia to the nostrils, the lowering the head and elevation of the extremities, were the most suitable remedies, with the sudden application, of the cold hand, or a wet towel, over the epigastrium, to rouse the system and excite respiration. This latter remedy had the desired effect for a time; afterwards the maintaining artificial respiration, by the Ready Method, in the hopes that the system might recover itself; and endeavouring, with the galvanic current, to excite the heart's action, as well as the respiratory movements. It is a question whether we do not discard too much in such cases the use of galvanism.

In conclusion, I have to ask myself, in what respect the method of administration was deficient. This, however, is not for me alone to answer. As to measuring the exact quantity poured on the lint, I have not pursued it, because it is no guarantee as to the quantity of chloroform inhaled, more especially when given in the ordinary way without any apparatus. The administration of small doses of chloroform is, in my mind, the safest plan, as the patient becomes more gradually under its influence, and less excitement and congestion of the face and brain is produced; certainly the patient becomes much more fully under its influence, and is a longer time in coming round afterwards. In a case, therefore, of fainting or syncope, there would be greater risk; but I believe many of the fatal cases hitherto recorded

have died rather from the administration of the chloroform than from syncope. An important question now arises—Has chloroform, administered gradually so as to bring the patient fully under its influence, a greater tendency to produce syncope than when given more rapidly, and in larger doses?

The subject of the effects of chloroform and its administration has of late been more fully studied by the profession; and I trust this case may serve to throw some further light on it, and I shall be only too glad to hear of any suggestion which some of your readers who have had experience in its administration may feel induced to make.

Reviews and Notices of Books.

Researches in Pathological Anatomy and Clinical Surgery. By JOSEPH SAMUEL GAMGEE, Staff-Surgeon of the First Class, Principal Medical Officer of the British Italian Legion during the late War, one of the Surgical Staff of the Royal Free Hospital, &c., &c. London: H. Baillière. 1886. pp. 216.

THE work before us consists of a collection of very interesting essays, eight in number. The table of contents is as follows:—1. Rupture of the Heart by External Violence. 2. Pathology and Treatment of Dry Gangrene. 3. Clinical Remarks on Cystic Sarcoma and Cancer of the Female Breast. 4. The Treatment of Cancer by Chloride of Bromium, or Llandolfi's Paste. 5. Syphilization. 6. Neapolitan Lithotomy, and the Relative Merits of Lithotomy and Lithotripsy. 7. Treatment of Fractures of the Lower Limbs. 8. Ossification of, &c., and Inclusion of Hair, Teeth, &c., in, the Testicle.

We cannot attempt to do more than just glance over some points connected with some of the questions raised by Mr. Gamgee's essays. Every one of them is interesting and suggestive, and written in an attractive manner; and our author is evidently enthusiastically fond of diving into every question of pathology, the more obscure the more deeply.

1. The cases of rupture of the heart appear to have been principally collected and inquired into with a view to determining the mechanism of the occurrence, and the usual site of rupture. The conclusion in respect of mechanism is—first, that jerk of the blood contained in the heart is one cause of the accident; and, secondly, that direct compression completes the mode of operation of violence applied to the chest in cases where rupture takes place. With regard to the site of rupture, it would appear that, out of twenty-two cases, twelve occurred on the right and ten on the left side. Taking ventricles alone, the right was ruptured eight times, to three times in the left; taking auricles alone, the seat of lesion was seven times on the left side to four on the right.

2. Respecting dry gangrene, Mr. Gamgee appears to attribute it to three distinct pathological conditions: arteritis, calcification of the arteries, and longitudinal splitting up of the middle coat of

the arteries. This latter condition is in reality that described by Carswell as a *white, firm cord*, occupying the arterial tubes; but our author affirms that, instead of being, as Carswell supposed, a solid cylinder, this structure is in reality hollow, and consists of the middle coat of the vessel, which has split up longitudinally, and then, separating from the outer coats, has undergone a centripetal contraction, carrying with it the lining membrane. There is an expression in paragraph d of the summary of this paper to which we object—viz. *disjunctive absorption*. The natural process by which a gangrenous part, or any other slough, separates is *ulceration* at the line where the dead and the living structures are in apposition. Ulceration is molecular death of tissue, and is wholly independent of absorption. We did not expect to see the Hunterian theory of ulceration, which is based upon a purely hypothetical view of the functions of the absorbents, revived in the present advanced state of pathology. But the general merit of the essay is considerable.

3. This essay discusses the value of the microscope as an aid to the diagnosis of benign and malignant tumours; and also the question as to whether secondary cancer may occur in a part which has previously been occupied by a non-malignant growth. As far as the first question is concerned, we do not see anything in Mr. Gamgee's remarks which places the question in a different light to that in which it is now viewed by nearly all well-informed surgeons; granted that cancer-cells usually affect certain forms and appearances, it still remains that these histological conditions are closely imitated by growths which are not malignant. And, moreover, we cannot see how the exact nature of the compound granular cells can always be determined. What is the test by which to separate a Gluge's compound inflammatory globule from a cancer-cell whose contents are undergoing fatty degeneration? With regard to the recurrence of a tumour in a part which had been previously occupied by a growth said to be non-malignant, we should think the mere fact of an undoubtedly cancerous deposit appearing in the site of the ablated growth a valid reason for suspecting the accuracy of the diagnosis in the first instance; and more especially if the *quasi* benign tumour were cystic. Taking an arithmetical view of the question—one to which we are not, however, by any means addicted—it would be a singular coincidence for a malignant growth, the undoubted result of a cachexia, to select the spot vacated by what was merely a simple local error of nutrition. So that in this point we think we can agree with Mr. Gamgee's conclusions.

4. Is a paper which will be read with great interest just at present. Llandolfi, and cancer cures on the continent, offer a very favourable contrast to what is in progress in this metropolis. Whatever self-delusion Llandolfi may labour under as to the value of his method, he at any rate is working, and has worked openly and under the eyes of the whole profession. His mode of treat-

ment consist essentially of the application of chloride of bromium, with other chlorides, made into a paste with flour, to the cancer. Add to this the exhibition of a pill, night and morning, containing a tenth of a grain of chloride of bromium, and the method is virtually before us. Llandolfi says he has cured 3000 out of 4000 cases. As our author sagaciously remarks, the roundness of the numbers is suspicious; and the absence of any published statistical account from the professor is seriously to be regretted.

5. Discusses the question of syphilization, and the control of prostitution. On the first head we partly agree with, and partly are opposed to, our author. As for immorality attaching to the practice, that is, we believe absurd, if it can be proven that any good is to be done by it; but that there is any body of facts in existence tending to show that the practice is promising to reduce the ravages of syphilis, we utterly disbelieve. As far as the control of prostitution is concerned, we feel compelled to differ from Mr. Gamgee. But we shall take an opportunity of developing our views upon this question at some future time.

6. In this paper a good *résumé* is given of the lithotomy *versus* lithotripsy question, and there is a description of the Neapolitan modification of the lateral operation for stone, which is interesting to the operating surgeon.

7. The paper on fractures of the lower extremities is only to be appreciated by reading it in connexion with the plates.

8. Is a very curious paper on certain morbid conditions of the testicle and its appendages. The fact that *bona fide* osseous tissue is to be found occasionally in this region, is very suggestive; for all hard deposits are shown not to be mere calcifications. Can any general statement be made as to the localities in which true bone may be deposited? Or, can any intermediate idea be produced to connect the bare fact with a physiological principle? The inclusion of hair, bones, and teeth within the testicle, is still more wonderful than the preceding facts. What explanation can be given of the phenomenon? Is it inclusion of what might have been a fœtus if it had not been prematurely inclosed by an associated ovum in process of development? Or, is it an instance of a modified kind of Parthenogenesis?

In conclusion, we can recommend Mr. Gamgee's book as a collection of very interesting papers, in which the subjects are very ably handled.

The Functions and Disorders of the Reproductive Organs in Youth, Adult Age, and in Advanced Life, considered in their Physiological, Social, and Psychological Relations. By WILLIAM ACTON, late Surgeon to the Islington Dispensary, and formerly Externe to the Venereal Hospital, Paris. pp. 108. London: John Churchill, 1857.

THE only way by which some of the most important functional ailments and aberrant physiologic states affecting humanity can be rescued from

the grasp of the most disgusting and villainous quackery, and treated with benefit to the patient, is by the scientific and conscientious practitioner *openly* taking them under his own charge. Dr. Marris Wilson commenced the crusade in several valuable papers lately published in this journal, by placing the pathology and treatment of secret diseases before the profession in a scientific manner. Mr. Acton has now followed in the same path. Why this has not been done before the last year or so is apparently due, on the one hand, to the unfortunate *prestige* which the very sound of their names bestows upon those who meddle with them, and, on the other, to the strange and paradoxical feeling of the sufferers themselves to prefer confiding, what they consider their *arcana arcanissima*, to the advertising impostors who publish books full of *secrets*! Now, however, that legitimate and able practitioners permit themselves to be known as willing to bestow as much consideration on the aberrations of the generative function as on those of any other, we trust that some stoppage will be put to the basest system of plunder ever conducted under the mask of "medical advice." If there is an *imperium in imperio* it is the *eros* in us, and a despotism more wayward in its effects does not exist. It bends the purest and holiest; is a law given to the youth, and is a jesuit to old age. It may be like the gift of the fairy, either diamond or toad. It often happens, too, that it is the man's own fault when he writhes under the scourges of its iron rod. But, as well remarks Mr. Acton,

"Great sympathy must be shown to a class of sufferers whom, I fear, the profession often treat in too off-hand a manner. In 1854, a medical student wrote to me from the country, saying that he had been twice cauterized, and he added, 'supposing all further measures you may suggest for trial fail, what do you think of the operation of castration as a remedial means?' I wrote in answer, that the operator and the operated upon should both be placed in a lunatic asylum, and that I declined prescribing without seeing the patient, experience having taught me the inutility of doing so. This man represents a large class, who will undergo any amount of present physical suffering to get rid of the ailment under which they believe they labour; and the probability always is, that these exaggerated accounts of disorders will turn out to be cases, we are now speaking of—namely, simulated diseases in lightly irritable persons, who, if not treated properly, will assuredly end their days in asylums."—p. 93.

Now, these are just the people the dirty quacks of the secret system long to draw within their clutches; once there, what between excited fear, the deepest despondency, and the constant drain upon the purse, the unhappy sufferer becomes alternately the most abject and pliant tool and clamorously reluctant paymaster. So long as he continues the former he is sure of attention; if he persist in being the latter, the sooner he swallows opium, or blows his brains out, the better the harpies like it. In the work now before us, all essential detail upon its subject matter is clearly and scientifically given. We recommend it accordingly, as meeting a necessary requisition of the day, refusing to join in that opinion which regards

the consideration of the topics in question as beyond the duties of the medical practitioner.

A Personal Narrative of the Discovery of the North-west Passage, with numerous Incidents of Travel and Adventure during nearly Five Years' continuous Service in the Arctic Regions while in Search of the Expedition under Sir John Franklin. By ALEX. ARMSTRONG, M.D., R.N., Fellow of the Royal Geographical Society, late Surgeon and Naturalist of H.M.S. *Investigator*. Published with the sanction of the Lords Commissioners of the Admiralty. London: Hurst and Blackett, 1857, pp. 616. Chart and Plate.

THOUGH no doubt many of our readers are well acquainted with the general history of North Polar Discovery, yet it may not be out of place here to recall a few of the leading facts connected with it as introductory to our notice of Dr. Armstrong's "Personal Narrative."

In 1819, Lieutenant Parry in his first voyage crossed the meridian of 110° W. long. from Greenwich, by which the Arctic expedition under his command became entitled to the sum of £5000, offered by the King's order in Council to the first ship which should succeed in penetrating so far to the westward. Having effected this, he unfortunately became pent up at Melville Island until August, 1820, when, being unable to penetrate in his renewed attempts beyond his former meridian, he returned to England. One great fact had been established by Parry in this voyage—namely, that a north-west passage certainly existed to beyond 110° W. long., thus leaving only an uninvestigated tract of about 300 leagues, which would connect Melville Island with Behring's Straits. Could this latter traverse be made, the entire continuity of water between Atlantic and Pacific would be demonstrated. As it was, however, the point remained unproven. After Parry, numerous explorers succeeded, of whom Clavering, Back, Lyon, Beechey, Ross, and Parry himself were maritime, and Franklin, Back, Simpson, Dease, and Ray were land travellers. But though the object of all resolved itself into Arctic research and the discovery of the north-west passage, none of the explorers endeavoured to push further on the track of Parry's first voyage, or penetrate the openings near Melville Island. This circumstance in connexion with the various failures induced Sir John Barrow in 1844 to ask the Council of the Royal Society to prompt the Admiralty to commission another voyage of Polar discovery, particularly bearing in mind the course and results of Parry's first voyage. The Admiralty listened, and on the 19th of May, 1845, the expedition left England under the command of Sir John Franklin. His official instructions directed him to proceed up to Lancaster Sound with as little delay as possible, to pass through Barrow's Straits, not stopping to examine any openings to the southward or northward until he reached the longitude of 98° W. From that point he was desired to use every effort to penetrate to the southward and westward, in a course as direct

towards Behring's Straits as the position and extent of the ice or the existence of land then unknown might admit. Should this be impracticable, other courses, with considerable discretionary power, were allowed the expedition, (see Weld.) Franklin's ships, the *Erebus* and *Terror*, arrived at the Whale Fish Islands on July 4th, 1845, and their last accounts bore the date of July 26th, 1845, when Captain Dannett, of the *Prince of Wales* whaler, met them in Melville Bay ($77^{\circ} 48'$ N. lat., $66^{\circ} 13'$ W. long.), all well and in good spirits. 1847 having passed, and no news of the explorers having been received, a voyage of succour was undertaken by Sir John Ross, and from then until the present time numerous voyagers have proceeded both by land and water to the Arctic regions in search of the missing ships of Franklin; hitherto, however, quite fruitlessly, except with frequent and great danger to themselves. But as we now write, a "final search" is being organized by Lady Franklin, under the command of Captain McClintock, R.N. The more certain knowledge we have of the fate of the lost expedition is that derived from the reports of Dr. Rae, and Messrs. Stewart and Anderson, of the Hudson's Bay Company. From these it may be stated, in the words of the *Montreal Herald* of Dec. 24th, 1855, from which we quote, that

"The *Erebus* and *Terror*, it is presumed, tried several passages, but were baffled by the ice; and finally, in 1848, were crushed probably in Victoria Straits. Many of the crew perished, but one or more boats got off with the survivors, who took all the stores they could collect and travelled southward towards the Arctic coast, in the hope of reaching some of the Hudson's Bay Company's ports. The season of 1849 was probably spent on this dreary journey, and renewed in 1850, when they reached the coast at the mouth of Fish River, but in so exhausted a state that they could merely run their boat on the beach and crawl ashore to die."

Amongst the expeditions sent out after Franklin were two ships, the *Enterprise* and *Investigator*. They were commanded by Captains Collinson and McClure respectively, left England in January, 1850, and proceeded to the Arctic regions by way of Behring's Straits. The two ships soon parted company, and the *Investigator*, commanded by Captain McClure, was obliged to be abandoned in 1853, in Mercy Bay, $117^{\circ} 55'$ W. long. $74^{\circ} 6'$ N. lat. The work now before us is the history of the progress of the *Investigator*. Though Captain McClure was unsuccessful in obtaining news of Franklin, and so unfortunate as to be forced to abandon his ship, he nevertheless reaped the long-sought-for honour of first making the North-west passage. On this latter point, Dr. Armstrong remarks—

"It has been stated that our discovery of the passage was secondary to that of Sir John Franklin's expedition. This in the present state of our knowledge regarding the fate of that expedition, I cannot admit. I should feel happy, not only to concede the point, but to announce it, in my reverence for the memory of such a brave and intrepid band, could I be convinced any proof existed

of their having reached the coast of America in the summer of 1850. That they did reach this coast I freely admit, and assuming that they did so by Peel Sound—thereby establishing the existence of a passage in that direction—there is no evidence which can possibly be relied on that it was prior to the period of our discovery (October, 1850). In the absence of this proof, I must reserve for H.M.S. *Investigator*, the priority of the discovery.”—p. vii.

The long-sought and dearly-purchased problem of a North-west passage being solved, it remains, however, to be asked, What is the result? As yet simply this—viz., we are *now sure* (a fact only presumed before) that by spending two or three years in the Polar ice, and by incurring fearful risks almost amounting to certain death to some, if not to all, of the party, a ship—supposing the latter misfortune does not happen—may be able to force a passage through certain of the narrow inlets, the least choked up by ice, which separate the straits of Behring from the straits of Davis! This appears little enough, it must be confessed, after all the exertions made to obtain it, but science, not commerce, must, in this case, balance the account before us.

Dr. Armstrong's narrative of the progress, &c., of the *Investigator*, is one of the most interesting books of Arctic travel which has come across our path, and no doubt will have a wide circulation. It must have been a sore thing for him to have been obliged to leave on board the abandoned vessel all the specimens of birds, animals, plants, &c., he collected as naturalist to the expedition. But he was, like the rest, fortunate in escaping with his life; and we think it was rather hard upon him, after all his labours and dangers, to give him so little holiday as the following extract implies:—

“On my return from Arctic service, at the close of 1854, my health was so much shattered that I was unable to undertake any literary labour. Early in the following year, as soon as it was recruited, the exigencies of the war in which this country was then engaged called me again into active service. After taking part in the Baltic campaign, the ship to which I belonged was ordered to the West Indies, from whence I have but lately returned, and until very recently have been unable to devote any time to authorship.”—p. v.

This is *active* service truly! However, Dr. Armstrong may claim the honour of having written one of the most important and entertaining books of the season.

On the Diseases, Injuries, and Malformations of the Rectum and Anus; with Remarks on Habitual Constipation. By T. J. ASHTON, Surgeon to the Blenheim Dispensary, &c., &c. Second Edition. pp. 398. London: John Churchill. 1857.

Less than three years ago, Mr. Ashton published the first edition of his now well-known work, bearing the above title, from the conviction that a hiatus existed in our surgical literature for a systematic treatise on this subject. Several monographs existed, which, while they were unquestion-

ably exceedingly valuable as far as they went, were not sufficiently comprehensive to include those exceptional forms of disease for which the practitioner especially needs to consult a competent authority. Every good treatise on general surgery now contains all the ordinary information required for the management of routine practice; but the medical man who has a case to treat which deviates somewhat from the typical form there described, (and how numerous are such cases,) wants something more than this in the hour of need. Mr. Ashton has supplied this want; and although other writers of a modern date have added their mites to the general store, we regard this work as the most comprehensive repertory of information on the subject of rectal disease.

The rapidity with which a second edition of the work has been called for is, after all, one of the best proofs of the manner in which it has been appreciated by the profession; and having stated that the present volume contains additions amounting to not less than forty or fifty pages of new matter, we feel that it is unnecessary to do more than recommend it very cordially to our readers.

Asylum Journal of Mental Science. Edited by J. C. BUCKNILL, M. D. London: Longman & Co.

IN scarcely any portion of professional knowledge has more rapid advance been made since “the good old days when George the Third was king,” than in all matters connected with insanity. The enlightened and scientific views now held on the statistics, pathology, and treatment of this disease find able expression and valuable furtherance in such a periodical as the *Asylum Journal*, the last quarterly number of which is now before us. The original communications in this number are five, all of them displaying a desire of careful investigation and power of clear thought. A paper by Dr. William Wood, late of Bethlehem Hospital, “On the Establishment of a State Asylum,” is well worth perusal. The author draws attention to the undoubted fact, that individuals, while suffering from certain forms of insanity, may render themselves amenable to the law without being, psychologically speaking, criminal; and he goes on to show that, under our present system of punishments, harder measure is dealt to the irresponsible lunatic than to the same felon; whence he concludes, that the State should provide, under certain legal and medical restriction, a special building and treatment for these unfortunates. A distressing picture is drawn of the condition of persons condemned, as insane, to perpetual imprisonment, and a contrast well established between such condition and the state in which the author proposes, by his plan of management, to place them.

The first, and perhaps principal, paper in the number, is one by Dr. Bucknill, “On the Pathology of Insanity.” Dr. Bucknill is a believer in the material origin of this disease; he looks upon

the mental disturbance as a symptom, simply, of certain changes in the ordinary course of cerebral circulation or nutrition. He does not admit the possibility of a different origin, for he says, in italics, at the bottom of page 290, "*diseased conditions which affect the mental functions must have their seat in the grey matter of the cerebral convolutions.*"

It may, perhaps, be difficult to follow Dr. Bucknill into some of his most ultimate conclusions; but it will be more difficult still to deny the great ability of his arguments and the power of his language.

A New and Improved Edition of Anatomical Plates; with Supplement. By JOHN LIZARS, F.R.S.E., late Professor of Surgery to the Royal College of Surgeons, and lately Senior Operating Surgeon to the Royal Infirmary, Edinburgh. London: Philip and Son.

THE fame of Mr. Lizars is, in a great measure, founded upon the well known anatomical work, accompanied with plates, which was published many years since, and to which a large number of students and practitioners have been indebted for that knowledge of anatomy which can be gained with reference to books or plates.

A new and improved edition has been recently published, together with a supplement, which may be, in fact, looked upon as entirely a *new work*; and as such we take pleasure in noticing it. This Supplement contains ten plates, engraved and coloured, and illustrating the Minute Anatomy of the Nerves of the Head and Hand, the Structure of the Female Breast, the Anatomy of the Testis, and that of the Male Perinæum and Pelvis. The description of the structure of the breast, founded mainly upon the observations of the late Sir Astley Cooper, is very clear and concise. The anatomy of the testis is well described; and the author has entered into a somewhat minute survey of the fasciæ of the perinæum.

The first two plates are devoted to the nerves of the head; three and four to the structure of the mammæ; five and six to the testis; and in the remaining four, the anatomy of the perinæum, urethra, and pelvis is illustrated. These last will be found especially interesting and useful. Fig. 5, in Plate IX., is

"to show that no central membranous septum exists so as to admit of an incision being made in the bulb, in the dangerous and uncalled-for operation of the perineal section, without the risk of fatal hæmorrhage which has occurred in that operation."—p. 6.

The work is a most valuable one; and we have more confidence in recommending it, coming as it does from a man with an eminent reputation as an anatomist and surgeon. The author states in his preface, that he is indebted to Mr. A. M. Edwards for the "very masterly dissections" which he has made, and also to Professor Goodsir.

The Press and the Public Service. By A DISTINGUISHED WRITER. London: Routledge and Co.

THE writer of this work says:—

"The right of anonymous writing is a protection the value of which cannot be exaggerated. It is one that no power can silence, no money can corrupt, no flattery can lull to sleep. To abolish it would be to bid the soldiers of truth go forth to attack the fortresses of error without armour, while any fool might launch poisoned arrows at them in security. To stand up for it stoutly, therefore, is not to encourage a nameless body of literary men in a course of doubtful honour, but it is to protect life, to insure property, to fence the altar, to guard the throne, to give space and liberty to all the finer powers of man, and lift him up to his right place in the order of creation."

Against dismissal for anonymous writing—that is, when the writer is a public servant—our author enters this protest:—

"It cannot be maintained that dismissal is not punishment. It is more than punishment; it is punishment sharpened by injustice—it is illegal punishment. Degradation is as severe an evil as bodily pain; not to enjoy is to suffer."

Finally, let it be observed that if the state of things ably set forth in this volume is to be worked into enduring precedent, let us not cry "*pro pudor!*" at the power which *excises* a neighbour's press, for this is, at any rate, done openly and boldly; but comprehend that we stand in much the same relation to a "gagging impost" that the Maine people do with regard to the consumption of fermented liquors: restriction on supply proving abortive, restriction on demand is to be attempted.

On Diseases of the Liver. By GEORGE BUDD, M.D., F.R.S. Third Edition, 8vo., pp. 496. London: Churchill

As this work is a standard one, it is quite unnecessary to enter at any length into its merits. It is sufficient to announce that this, the third edition, comprises all the further information which the author has gleaned on the diseases of the liver, since the publication of the last edition of his work.

Medical Annotations.

"Ne quid nimis."

OUR social system has recently undergone one of those virtuous spasms to which the British constitution is particularly liable, at short intervals, and from divers causes. We are now as well as can be expected, and as wicked as ever; notwithstanding the revelations recently made as to the frightful depravity existing in London, injurious alike to our physical and moral welfare—disgraceful alike to the poor wretches by whose debasement it exists, and to the blind leaders of the blind who seem to think the great extent of prostitution in London sufficient reason for avoid-

ing its consideration or attempting any practical means of reform. For there has been no laxity in collecting facts and statistics. The increasing prevalence of the greatest of our social sins is well known, and the awful evils entailed by it fully recognised. Upwards of 80,000 females are computed to gain their living by prostitution in London, and during last year more than 4000 were arrested by the police. Cargoes of them are actually imported from the continent because London presents the best market. And these figures and facts are again and again adduced by theoretical philanthropists to prove the enormity of the evil, yet nothing practical is suggested or attempted whereby to stem the torrent that is spreading the abomination of desolation far and wide. The alleged reason, forsooth, is that no efforts can reach all the sources of the evil; and therefore no attempt may be made to check the impetuosity of the stream. We are aware that several excellently-managed reformatories exist, but the whole number they can receive does not equal that of the "lock" patients under treatment in general and special hospitals. Moreover, those who are received have usually had their swing of vice, have drained the cup to the dregs, and are only awakened to the foulness of the draught when they begin to taste the bitterness of the sediment.

Mean while there flourish, at the West-end, gorgeous houses where passers-by see only the painted face of Jezebel look out of the window, from which sight Virtue averts her face and blushes—yet we are asked to believe that she does not see or know why she turns away her head. The children of Cornelia inquire concerning the "beautiful lady" whose quiet brougham stops the way at the door of theatre or concert-room, and we are expected to assume that it is ignorance which makes the pure matron hesitate to answer them. Sampson, whose fine proportions are the envy of the Domestic troops, drives Delilah in the park; and we are asked to suppose that his sisters are unaware who it is sits by his side. The daughters of Dives, knowing all about the plot of the "Traviata," visit the opera to witness the apotheosis of a consumptive prostitute, and drive home through the Gehenna-fair nightly held in the Haymarket; yet we are expected to credit that they lay their heads on their pillows without considering what it all means.

We do not cite these illustrations at random, but select them to direct attention to the most practical means of remedying the evil without too much shocking the dainty consciences of those who object to direct legislation on the subject. Each case alluded to has a meaning and conveys a lesson. Houses at enormous rentals are seldom devoted to infamous purposes without the cognizance of the landlord or his agent. Indeed, it is well known that higher rents are usually exacted on account of the use to which the premises are applied. We therefore believe that a far greater responsibility should be imposed on landlords in regard to the manner in which their

houses are occupied. This is ease enough to ascertain,—quite as easy as the detection of alterations made contrary to the lease, of which the tenant rarely fails to receive very early official warning.

To those who have none others than themselves to care for, the presence of prostitutes in every public place of resort is little more than matter of passing notice. To the mother of a family it is something far more serious. That her daughters should witness the openly permitted blandishments of these women is to her a constant misery. That her sons may fall victims to the arts of "the syren woman with a serpent's tongue" is a perpetual fear. Members of our profession must have deep cause to respect the beautiful homely virtues that fill the kind hearts of our English matrons. Yet the sense of burning shame with which they must regard the openly displayed depravity of their sex, seems never to have been thought worthy of consideration or comment. Do men ever reflect what would be their own feelings of horror and disgust at seeing an Antinous parading the streets plying for hire, after the manner in which courtezans openly pursue their trade in London?

But one of the most important (if not *the* most important) means for reforming the existing evil is an enforcement of stringent punishment for seduction. Instead of compelling the seducer to pay a paltry sum (probably far less in amount than he has expended to accomplish his evil purpose), we contend that none but directly personal punishment should be inflicted. If the evil-doer who tempts a girl from her home, who laughs at the threats of her parents, and keeps her

*"till his passion shall have spent its novel force,
Something better than his dog, a little dearer than his horse,"*—

knew that two or three years of imprisonment awaited the detection of his guilt, he would hesitate in his evil course: for there is no such selfish animal and moral coward as a libertine.

Lastly, we protest, in the name of common decency, against the deliverance of one of the largest and most important of our thoroughfares, for five or six hours every night, to the sole use of prostitutes and their companions. It is well known to every inhabitant of London that no person can at these times pass through the Haymarket without seeing and hearing an amount of appalling wickedness unparalleled in any city in the world. Shops, taverns, cafés, brilliantly-lighted saloons, as specially devoted to the use of the courtesan as the Stock Exchange is to that of the merchant, are allowed to remain open throughout the night. Through such scenes roll homeward the carriages of fair and high-bred damsels from opera or concert. And well is it if their thoughts go no further astray on witnessing such sights than to feel gratitude for their own lot; even as old Bradford, the martyr, was wont to exclaim, when he saw a criminal going to the gallows, "There goes John Bradford, but for the grace of God." Here the hopes and happiness of many a family are wrecked by the mad

whirl of excitement that upsets the feeble brains of striplings and weak-minded men. Here the thoughts of many a poor girl, cursed with a dowry of beauty, daazled at the rustling silks, and deceived by "the loud laugh that speaks a vacant mind," have, for the first time, turned to evil. If in a street, thus centrally situated, there broke forth a terrible plague—so terrible that death was in the very air—prompt and efficient means to subdue the evil would soon be devised. Yet a moral plague, more harmful than words can describe, prevails there night after night. To stay it with a firm hand is the duty of those in authority; and until some practical efforts are made to check the force of the current itself, as well as to catch the drops that eddy back into virtue, all preaching, and groaning, and theorizing about the increasing evils of public prostitution is idle and hypocritical. The only result of such puritanical shirking of work that must be done sooner or later, is that still more applicable, and yet more nearly home to ourselves, will become that terrible denunciation, "Woe unto you, scribes and pharisees, HYPOCRITES!"

THE account lately received from Sarawak of the bloodthirsty attack made on Sir J. Brooke and his neighbours still further complicates that knotty point in the probable history of the races of man—the destinies of the Chinese nation. If there has hitherto been little sign of their mingling and blending with the people of other countries, they have at least shown themselves subservient to the authorities in colonies to which they have emigrated. But the late insurrection at Sarawak has proved that no intercourse with other nations diminishes the inherent barbarous and bloodthirsty spirit of the race. Two hundred Chinese attacked the English residents, in the belief that the destruction of the Government agents would free them from British control. Luckily they were soon overwhelmed, and a stern measure of retributive justice dealt out to them. But they still had time to commit some terrific outrages on the inhabitants; the old brute-instincts appearing as strongly as ever, after years of community with Dutch and English settlers. They cut off the head of one resident by mistake, and naively sent it back next day, with an apology for the error. They kicked about the head of a murdered child, whilst its mother was a spectator of the scene. They ferociously attacked Mr. Crookshank, the resident magistrate, and his young wife, who, severely wounded, was left for dead and her body found in the jungle next morning covered with leaves. To these sufferers the Bishop of Borneo, the Rev. Mr. M'Dougall, afforded timely surgical aid. Owing to his ready skill and care, most of the wounded are now doing well; and even Mrs. Crookshanks, notwithstanding her apparently hopeless state, is reported to be rapidly recovering.

When so many religious missionaries and clergymen yearly leave this country for wild and

semi-cultivated regions, it is strange that so few possess, or are expected to acquire, any knowledge of surgery or medicine. They are abundantly primed with elaborately useless accomplishments. The Universities lay great stress on the possession of classical and mathematical attainments, which are, on the whole, as useful for the conversion of Hindoos and Hottentots as a paper-knife would be in working a coal-mine. On the other hand, no attempt is made to impart to them even the rudiments of that knowledge whose perfect attainment enabled the Bishop of Borneo to achieve such a signal triumph of surgery as the preservation of the lives of those wounded at Sarawak. For the Rev. Mr. M'Dougall, Bishop of Borneo, received a medical education, and was admitted a member of the College of Surgeons in 1839. Before he sailed he was created a fellow by the vote of the Council, and has well proved how worthily the honour was deserved.

FOUR scientific exploratory expeditions are about to leave Europe, with the purpose of supplying some of the missing links in the chain of that physical science which embraces "the world and all that therein is." An Austrian frigate, the *Novara*, is about to sail from Trieste, on a voyage round the world; having on board four medical men and a scientific commission, including a special physiologist. The *Novara* will touch at every point of importance, and remain three entire months at Nicobar Islands. The little kingdom of Bavaria has also been warming up its scientific fervour, and is about to despatch Dr. Moritz Wagner, the great traveller and naturalist, on an expedition to South America. From England two expeditions are about to set sail, with the object of extending our knowledge of the world, and one is preparing to seek for any traces of the ill-fated Arctic voyagers. The vessel has been bought and fitted up at the expense of Lady Franklin. It might appropriately be named "the *Forlorn Hope*," and all must wish that it may achieve the success that has attended the struggles of many a gallant band who have bravely fought and won under a similar title.

The two exploratory expeditions comprise one which has for its object the prosecution of researches in the interior of Africa. It is entrusted to the charge of Dr. W. B. Bawtree, Surgeon R. N., who has been liberally supplied with all things essential to aid his undertaking. In consideration of the dangers of the expedition, the salaries are to be doubled, in addition to the half-pay. The Admiralty has also undertaken the supply of chronometers, instruments, and books. The other expedition will shortly proceed to its starting point on Lake Superior, and thence commence an exploration of that vast tract of British America on the western side of the continent, which has hitherto been so little investigated. This expedition will be accompanied by Dr. Hector, whose high qualities as a geologist, naturalist, and surgeon, have led to his selection. It is stated

that Government has promised to ask for a parliamentary grant in aid of this important exploration.

THE history of the fanatics who have successfully traded on human credulity forms a very lamentable chapter in the book of human life. But Swedenborg, Prince Hohenlohe, Count Thun, Hahnemann, and Preissnitz, if they deceived others, were themselves believers in the irrationalities they put forth; and so the lives of all these men afford some explanation, though no extenuation, of the deceptions they practised. The over-worked brain of Swedenborg, the over-starved body of Hohenlohe, and the ignorance of Preissnitz, sufficiently explain whatever is marvelous in their assumptions. Had Preissnitz been content with a modest account of the great curative importance of water as an active agent in the treatment of disease, the value of his teachings would have been acknowledged. But he argued of the whole from a part; he would invoke a *Deus ex machina*, and describe Hygeia as arising from a tub, even as Venus rose from the sea. Hence the work which he should have accomplished remains yet to be done.

The deceptions of Mesmer had a far different origin. His mind had not been broken by incessant toil like that of Swedenborg. He was no fanatic, no narrow-minded man, judging of a house by a brick. The record of his life is one long story of barefaced assumption, of impudent jugglery, and of the direction of an acute and indefatigable mind to the most evil ends. The materials of deception were ready to his hand, and he employed them without scruple or compunction, making ignorance, superstition, and credulity all subservient to fill his coffers. This description of his character and objects is none of ours. A committee of learned men (including the names of Franklin and Lavoisier) appointed to inquire into his alleged discoveries, reported that Mesmer was either an arrant impostor or a deluded fanatic. Whoever has read an account of his symposia, his crafty money dealings, and his absurd advertisements, cannot doubt which of the characters was his due. We believe that few of the professed believers in mesmerism have ever studied this foul page of biography, or they would be heartily ashamed of their leader. It is a deplorable fact, that even members of our own profession are to be found—though, happily, their numbers are few—who, professing belief in the horrors and errors of mesmerism, blind their eyes to all the lessons taught by long experience and deep study “of the disturbances that Nature works, and of her cures.” A painful example of the effects which naturally ensue from such an unfortunate warp in the judgment has recently fallen beneath our notice. The history of the case is related in three leading articles of a provincial newspaper, which have been subsequently republished by the professional man who attended the patient, and who appends to the descriptions

a certificate of the correctness of the description, and therein declares that the “effects have not the slightest connexion with collusion, deception, or any other imposition.” Then follows his signature—“A. C. TWEEDIE, M.R.C.S.L., Lic. R.C.S.Ed.”

A girl aged eighteen, residing at Galashiels, was recovering from a bilious fever when there occurred some “convulsive fits,” accompanied by spasmodic cough. For these it is stated that “all the remedies in the pharmacopœia were exhausted—viz., prussic acid, cannabis, antimony, morphia, and chloroform.” Then Mr. Tweedie had recourse to mesmerism. After the usual manipulations, the poor girl fell into a condition of stupor, in which she continued for five weeks, being all this time unconsciously fed with beef-tea. During this period she appears to have been exhibited as a show, since the editor recounts a series of experiments performed for his edification. These were of the usual kind, marvellous enough to those who have never witnessed the vagaries of hysteria, but falling far short of the wonders related on good authority, of St. Theresa, who lived long before mesmerism was thought of. De-mesmerization was followed by the recurrence of convulsions, and so, to cut a long story short, she remained more or less subject to this so-called mesmeric influence for a period of nine months, and then recovered. But, for a long time afterwards, if she met Mr. Tweedie in the street she immediately fell into the old state of trance, and it was not says the report, “until she had been brought to dispense with mesmerism to induce sleep at night that this influence of the operator ceased.”

This is a very painful case. A confessedly hysterical girl, prostrated by a recent fever, powerfully manifests the peculiar impressionability and want of self-control which every medical man must have witnessed in such cases, and endeavoured to subdue and check, instead of encouraging such a morbid mental condition. Sedatives and depressants, morphia and antimony, were administered with the effect that might have been anticipated. No mention is made of tonics, wine, good diet, or moral control having been tried, but, according to the report when the above-mentioned remedies failed, “Dr. Tweedie resolved upon trying mesmerism.” Luckily, during the whole of the time that this last mode of treatment was continued, she was supported with beef-tea freely administered; and we firmly believe that this cured her, in spite of mesmerism. We need hardly direct attention to the usual effect produced on a feeble girl in a condition of hysterical semi-consciousness, by exhibiting her as a show, and making her perform a series of tricks, like an educated French poodle, for the edification of the people of Galashiels. But the description of an involuntary trance, ensuing on her meeting the mesmerising medical man in the street, as it was entirely independent of his will, altogether upsets the whole theory about the necessity of an operator being *en rapport* with his patient. We trust that the Colleges of Surgeons of London and Edinburgh will take into consideration the particulars of this

very sad case, since the qualifications bestowed by them on Mr. Tweedie are printed at full length, to give authoritative weight to the account.

ANOTHER addition has recently been made to that formidable array of vegetable alkaloids whose possession is luckily only attainable by scientific men. M. de Lucca has succeeded in separating, by long digestion in alcohol, and subsequent slow evaporation, the active poisonous principle of the *Cyclamen Europæum*, or common sow-bread. The vernacular name of sow-bread is derived from the Cyclamens being the favourite food of the wild-boars in Sicily. In its natural state the root of these plants is so violently acrid and irritant, that the modern Greeks, according to Sibthorp, employ the *Cyclamen Persicum* to drive the eight-footed sepia from its holes; and a quarter of a grain of the juice of the *Cyclamen Europæum* injected into the trachea of a rabbit, caused its death in ten minutes. Bromine is said to be an antidote to its poisonous effects; but the root of the plant, when roasted, is described as edible and innoxious. The new alkaloid, called Cyclamine, is white, opaque, and brittle, rendered gelatinous by water, and assuming a dark colour on exposure to light.

IN Friday's *Gazette* it was announced that the dignity of knighthood had been conferred on Dr. Locock, who has assisted her Majesty through so many hours of trial without the occurrence of a single mishap. The title of Sir Charles Locock was dated from the day on which the young princess was born. An equally well-merited honour has also been conferred on Colonel (now Sir Alexander) Tulloch, who has been made Knight Commander of the Bath—in delicate allusion, we suppose, to the official cold water which has so long been thrown on the meritorious services of this gallant officer.

New Inventions.

IN AID OF THE

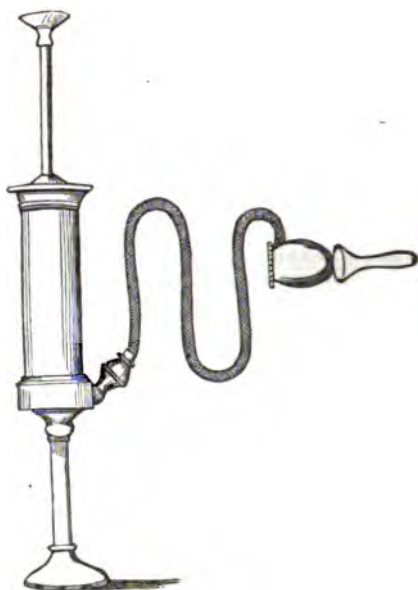
PRACTICE OF MEDICINE AND SURGERY.

SELF-ACTING ENEMA SYRINGE,

WITH RECEDING ROD WHICH CAN BE USED WITH ONE HAND.

THIS is one of the most useful and at the same time neat instruments employed as a syringe we have seen for a long time; it has been invented and registered by Messrs. Whicker and Blaise (late Savigny and Co.), of 67, St. James's-street. It consists of an enema syringe, as represented in the drawing, with a piston rod, which, by the slightest pressure on the top, forces it downwards, throwing up the fluid, and by means of a spiral spring the rod recedes again of its own accord.

The very great advantage of this instrument is, that it can be used with one hand with the greatest ease—an object of some moment to



invalids or persons in the most delicate state of health. Its construction is so simple, and withal so ingenious and novel, that it is not at all likely to become deranged or to get out of order. We can very strongly recommend it to the profession and the public for its simplicity and its portable form. We have seen breast and stomach-pumps on the same self-acting principle, also manufactured by Messrs. Whicker and Blaise, which together with the enema syringe, can be had in one case. No medical man should be without one.

Clinical Records.

ISCHURIA RENALIS, FOR FIFTY-SIX HOURS AFTER PERINEAL SECTION.

WHEN describing in another part the performance of perineal section upon a man, by Mr. Erichsen, with Mr. Marshall's new instruments, we mentioned that the vapour of amylene was used instead of chloroform, as the latter had on a former occasion produced very disagreeable and troublesome after-effects, which very naturally were supposed to depend upon the chloroform itself. However, a very curious train of symptoms followed the use of the amylene, which, Mr. Erichsen observed, in his experience, were unparalleled after this operation. Soon after the operation he was seized with incessant vomiting and hiccup, which continued more or less up to the time we last saw the patient, on the 25th March. His urine continued to flow through the catheter on the day of operation (18th) up to six P. M., when it ceased from that time to the morning of the 21st—fifty-six hours; there being complete sup-

pression of urine, none being secreted by the kidney, constituting ischuria renalis. The bladder did not contain a drop of urine during the whole of this time, and the prognosis seemed to be serious. The catheter was therefore withdrawn. The skin during this period, fortunately for the patient, took on the function of the kidneys and perspired most profusely, which no doubt prevented the blood from becoming in a state of toxæmia. It then became very red, the result of this over-secretion, and resembled the skin of scarlatina. Under the influence of a bath (on the 20th) and turpentine fomentations to the loins the secretion of urine returned, and convalescence ensued. Now, this case is one of very great interest indeed, from the presence of this symptom, which we would hesitate to consider due to the operation of perineal section alone, did we not know that it sometimes occurs after operation for stone. The patient's system appears to be antagonistic to anesthetics; for although there was no suppression of urine when chloroform was given on a former occasion, yet the after-effects were exactly similar to those of the amylene. The influence of this agent on the blood, it must be remembered, is more transient than chloroform. The urine was examined on its commencing to flow, and was found to be albuminous.

PARTIAL BLUE LINE OF THE GUMS IN LEAD-COLIC—A SULPHURET OF LEAD.

In a case of lead-colic in a young female (an operative from a white-lead factory), in the Royal Free Hospital, Dr. Brinton drew attention to the very partial character of the blue line on the dental edge of the gums. The teeth were quite clean, and free from any decay; in fact, beautifully healthy. The lead line was limited to three of the four incisors of the lower jaw. The case was severe; but (as usual) yielded at once to appropriate treatment. Dr. Brinton regards the blue line as the *sulphuret* of lead, and hence as produced by a deoxidation of some salt of lead; but the mode of this deoxidation seems to him doubtful, perhaps even variable. He states that in ordinary lead paint, or glazed cards, it is easy to see that the minute quantity of sulphuretted hydrogen present in the air quite suffices slowly to form a sulphuret; and it is equally certain that the larger amount of this gas often present in many parts of the digestive canal exerts a still more energetic action of the same kind on salts of lead taken into it medicinally. But in the case of the blue line around the dental edge of the gum, that this deoxidation is effected ("conditionated") by the teeth, is shown by its abrupt cessation where the mucous membrane has closed over an extracted tooth. He therefore inclines to conjecture that the lead is derived from the saliva; and deoxidized possibly by vital actions connected with the chemistry of the teeth, but probably in still greater degree by an absorption and concentration of the saliva retained in the

groove of the gum, followed by an exposure to the sulphuretted hydrogen of the air, or to that of its own decomposition. The analysis of the saliva in lead poisoning would, Dr. Brinton thinks, test this view, which in the meantime certainly has the merit of explaining most of the varieties of lead line he has hitherto seen. In the above case, for example, he should conjecture that the limitation of the blue line to the undermost incisors was determined chiefly by the exposure of these teeth to the external air—an exposure brought about by a slight peculiarity of the patient's mouth.

RECTO-VAGINAL FISTULA AND PROLAPSUS UTERI CURED BY ONE OPERATION.

THE patient the subject of this affection was sent up to St. Mary's Hospital from Suffolk, and is about thirty-eight years of age, the mother of several children, the last being born about twelve months ago. The labour being long and tedious was followed by rupture of the perinæum up to the sphincter, which partially united, the cicatrix of which can be seen, leaving a recto-vaginal fistula the size of a fourpenny-piece, through which the motions were constantly passing, rendering the poor woman's life very miserable and wretched. When laying down, the os and cervix uteri prolapsed externally, and in the erect posture the whole of the uterus came down. There was thus a double affection to deal with, which Mr. Baker Brown remedied by a plastic operation on the 25th of March, consisting of his usual horse-shoe denudation, as described in former "Mirrors," taking care that it extended beyond the fistulous opening, the edges of which were pared, and then dividing the remaining portion of the recto-vaginal septum through the sphincter, the parts being very nicely brought into apposition by the quill suture, only gutta-percha being used instead of the quills, and lastly the small sutures were applied. Our opinions have already been expressed on previous occasions on the value and importance of these plastic operations, with which Mr. Brown's name is becoming so favourably connected, that it is unnecessary to say anything further on this occasion. But in the present instance a somewhat new plan was adopted by him, curing the two affections from which this patient was a martyr by a single operation, a plan equally bold as it is original, and from which Mr. Brown deserves very great credit. The deep sutures were removed late on the second day, and the parts are now well united. The operation has, therefore, proved quite successful.

PERINEAL OPERATION IN PROLAPSUS UTERI.

Mr. Fergusson has recently performed two operations on the perinæum for old-established cases of prolapsus uteri; the womb in each case

projecting from the vulva, and presenting a tumour about the size of a foetal head. The perinaeum having slowly yielded, offered no support for the womb; which, immediately after its reduction, at once re-descended on the patient standing upright. In the case last operated on, amylene was administered, and the patient placed in the lithotomy posture. The left labium was then seized with a pair of long forceps, and a strip of skin and mucous membrane dissected off; the incision commencing on a level with the urethra, and ending at a corresponding point on the opposite labium. Thus a sort of triangular tongue, including all the loose redundant skin, and a crescentic strip of mucous membrane (having its broadest part at the rectal aspect of the vagina), was removed in one piece. The raw surfaces left were brought closely together by deep quilled-sutures of stout silk (entering the skin three-quarters of an inch from the incision), the ends being passed over pieces of bougie in lieu of quills. A few ordinary sutures were then applied to the margins. Mr. Fergusson stated that he had, many years ago, performed an operation somewhat similar, and that it had also been done abroad, but the results not being satisfactory, it had fallen into disuse. The particular point of the present operation was not only the apposition of a large extent of new surface for firm support, but the contraction of the calibre of the dilated vagina. He had recently seen several cases treated on this principle by Dr. Savage, of the Samaritan Hospital, and also been present during some of Dr. Savage's operations. These having turned out well, he had determined to pursue the same plan in the two cases recently witnessed. Up to the present time, both cases are going on favourably.

EXTENSIVE NECROSIS OF THE FOOT.

The first appearance of the foot presented by this case, at Guy's Hospital, would lead one to suppose that the entire bones of the tarsus were destroyed, from the swelling, redness of the skin, and numerous fistulous openings which were present, two of them of considerable size. The disease had existed for upwards of two years, the patient being a young man who had had some portions of dead bone removed on a previous occasion, at another hospital. Mr. Hilton ran several of the openings together, exposed the diseased bones, and removed the base of the metatarsal bone of the great toe, together with the scaphoid bone, the articular surfaces of which were destroyed and in a carious condition. The internal cuneiform bone must have been taken away on a former occasion, as it was not to be found. There is every prospect of the case doing well, as the extent of the disease was not so great as was supposed.

GOOD EFFECTS OF GUAIACUM IN CYNANCHE TONSILLARIS.

DR. BRINTON has been treating several cases of

cynanche tonsillaris at the Royal Free Hospital, on what he informs us has been his usual plan for many years,—a plan so simple and so efficacious as to deserve mention. He regards the tonsils as an offshoot of the intestinal canal, and considers that not only is constipation, in most cases, an element of the malady, but that, on the above view, the inflamed structures are best relieved by free purging, and perpetual gargling and fomentation with hot water. For the first of these indications he relies chiefly on powdered guaiacum, which he gives in large (one scruple to one drachm) doses, every four hours; often in combination with opium, aloes, and jalap, and suspended in mucilage. He finds that, if commenced tolerably early, this treatment generally averts all abscess, and even later, rapidly removes the malady, while it allows of a rapid recovery, very unlike the long convalescence which often follows bleeding, blisters, and tartar emetic.

DEGENERATED FATTY TUMOUR.

THE situation of this tumour, the size of a cocoa-nut, was at the lower and inner part of the right thigh of an elderly female, at King's College Hospital, which had been upwards of twenty years attaining to this size. The leg and thigh were covered with large and numerous varicose veins, and the tumour looked as if it was a large aneurism by anastomosis. It was removed by Mr. Fergusson on the 21st ult. under the influence of amylene, with some rapidity, as there was a good deal of bleeding. On section it proved to have been originally a fatty tumour, and from time to time bloodvessels had burst in the fat, causing enlargement, alteration, and degeneration of structure, so that it was now, perhaps, more of a fibrous than a fatty tumour, although portions of true fat were still to be seen throughout the section. It is not likely that it will return, especially as it is not malignant. On one part of it, before removal, the skin was ulcerated, from which occasional bleeding ensued; its structure close to this was very soft.

IDIOPATHIC DYSENTERY TREATED BY BISMUTH AND ASTRINGENTS.

WE all know the value of bismuth in the dysentery and diarrhoea of phthisis—in fact, its importance cannot be over-estimated in that particular affection. We have had the opportunity of watching a case of idiopathic dysentery, which is at present in the Royal Free Hospital, under Dr. Brinton's care, of a young man who was admitted, on the 4th of February, with as many as twenty dysenteric motions per diem. Its origin was due to cold, whilst working in a gas factory by night; there was no evidence of the existence of putrefying matter in the neighbourhood. Under the influence of a mixture consisting of a scruple of bismuth, ten grains of compound powder of kino, two drachms of mucilage, and an ounce of infusion of krameria, every six hours

conjoined afterwards with enemata every night, of twenty minims of tincture of opium, two drachms of tincture of catechu, and two ounces of decoction of starch, the stools gradually diminished to only one daily for the last fortnight; the last three days he has had none. At the same time, the most careful attention has been paid to his diet, which consists at this moment (March 18th) of fish. He has been a voracious eater, and is now only kept in hospital for the purpose of regulating his diet. The treatment pursued here proved highly satisfactory, and is well worthy an extended trial in dysenteric complaints. We will not say the good effects were solely due to the bismuth. Of late years, it has been specially recommended, not only in the diarrhoea of phthisis, but also that of enteric or typhoid fever, and the chronic diarrhoea of children.

AMPUTATION OF THE THIGH FOR DISEASE OF THE KNEE.

On the 10th of March, we saw two legs amputated, at Guy's Hospital, through the thigh, for an advanced stage of disease of the knee-joint. The first was by Mr. Hilton, who performed the flap operation upon a young woman, in whom the disease of the joint was chronic, and somewhat extensive; no other measure than amputation would have been of any service. The second was a case of long-standing disease of the left leg and knee, which had been in hospital nearly twelve months, under Mr. Birkett's care, with extensive caries of the tibia, which had spread to the knee-joint. He had been trying to remove the local disease, but without success, as it had not only invaded the joint, but an abscess formed above it. A large fistulous opening was present below the anterior tuberosity of the tibia, from which exuded thick pus. Mr. Birkett would have adopted more active measures on an earlier occasion, but he was anxious to improve the patient's general health. He had, besides, an attack of acute Albuminuria during this period, but has completely got over it. He, moreover, had led a dissolute life, and was in the Crimea, it was believed. By removing this drain upon the system, Mr. Birkett thought the man's general health would become better, and accordingly the leg was taken off by the circular operation, under chloroform.

On the 12th inst., Mr. Curling, at the London Hospital, amputated the thigh of a man, aged forty, with disease of the knee-joint, arising from an injury nine months before, the last five of which he had been an inmate of the hospital. An immense abscess formed within the joint, which extended upwards into the thigh, and which was cut into during the operation. On laying open the joint, the synovial membrane was much distended, filled with pus, and most extensive pulpy degeneration was present, the bones and articular cartilages being quite sound. What with the unhealthy state of the cartilages, the man's bad constitution, and the extension of suppuration, Mr.

Curling said it was not a suitable case for excision.

On the 28th of February, a very remarkable case of diffuse erysipelatous inflammation of the leg and thigh was brought into the operating-theatre of Bartholomew's, for amputation very high up, which was done by Mr. Stanley. As many as sixteen different incisions had been made before this to let out matter, and so extensive was the cellular inflammation, that the hamstring tendons were as cleanly exposed as if carefully dissected. No history could be obtained from the man, whose age was forty-six. There was scarcely healthy tissue enough to form a flap, which was, however, obtained from the back part of the thigh. The discharge had been so profuse and exhausting that we did not expect the poor man to rally, but when last we saw him, he was going on pretty well, and taking six ounces of wine in the twenty-four hours; there was healthy suppuration from the stump.

INFILTRATED CANCER OF THE BREAST.

A case of what Mr. Birkett applied the term of small cancerous infiltration of the mammary gland, was treated by removal on the 18th inst., at Guy's Hospital, in a single, middle-aged female. There was a cancerous tubercle incorporating the upper part of the nipple, but the axillary glands were unaffected, and the prospects of a favourable termination were pretty fair. Mr. Birkett observed, that many present might ask the question, why this breast was excised, when it might be got rid of by the use of escharotics? He said it is a good rule in surgery, to do to one's patient as one would wish to be done by, and he therefore preferred to remove it by the knife quickly and effectually, in preference to the tedious and painful method by the use of escharotics, which is an affair of many weeks. While on the subject of cancer, we may remark, that we asked to see the cases submitted to treatment at the Middlesex Hospital, under Dr. Fell, but were told nobody could see those cases but the surgeons themselves, and that even the resident medical officers were debarred that pleasure. We have learnt, moreover, that many of the cases of reputed cure of cancer by this gentleman have returned upon his hands with a recurrence of the disease. We think most surgeons will agree with us, that no specific has yet been discovered to cure cancer.

GLYCERINE AND BORAX IN CRACKED TONGUE.

Dr. BRINTON has under his care an inveterate cracked tongue, which (like that of the late Charles Mathews) had baffled all attempts at alleviation for many years. It could not be referred to any syphilitic poison, and rendered eating, and especially speaking, very painful. Dr. Brinton made use of a favourite remedy of his in such cases—viz., borax dissolved in a lotion of glycerine (Price's Patent Candle Company's) and water

(two scruples, one ounce, and four ounces respectively). It at once gave marked relief; and after a few days, during which it was the only remedial agent, the improvement seemed increased by iodide of potassium, and bark taken internally. The patient has now considered himself well, and discontinued the lotion for some weeks, and the cracks are only visible as depressions in the mucous membrane.

THE USE OF SUTURES IN STRABISMUS.

THE operation for squint has of late been much discussed, and the subject brought before the professional public. Mr. Haynes Walton modifies his accustomed operation by the use of sutures to bring the divided conjunctiva together. It is probably well known that he incises the conjunctiva to a very limited extent, close to the cornea, and endeavours not to interfere with the cellular ocular sheath, believing that by such a course prominence and eversion of the eyeball are prevented. He is very much pleased with his recent practice, which we understand is not uncommon on the Continent. The dropping of the caruncle, and the slight vacancy at the inner corner of the eye—effects more or less visible in the majority of cases, but seldom much marked in his style of operating—almost disappear under the suture system. It might be thought the stitches would produce irritation, and so act injuriously, the suspicion of which long deterred Mr. Walton, from employing them. They are not in any way prejudicial. There is just one little practical matter that should be observed—namely, to insert them at the very edge of the cut, in order that the conjunctiva may not be made tense. The needle should be round rather than flat, because if the edges or sides are even moderately sharp, they will cut out of the membrane. Mr. Walton employs two stitches, and allows them to remain two or three days. It would hardly be supposed that union by the first intention would occur; but it really does, when the edges of the incision are carefully adjusted; and this is no difficult matter. Instead, therefore, of an open wound, with the probable occurrence of fungous vegetations from the one or other of the sides of the retracted membrane, and redness of the eye for a long period, there is rapid and complete union, and early loss of the violence of the operation, besides the other important advantage that has been mentioned.

COMPLETELY IMPERMEABLE STRICTURE.

ON the 17th inst., Mr. Cock submitted a patient at Guy's to treatment who had an impermeable stricture of the urethra of many years' duration, with numerous false passages and perineal fistulæ. A great deal of the spongy portion of the urethra was a shrivelled-up, impermeable cord, through which not a drop of urine had passed for months. With this Mr. Cock for the present did not interfere. He, however, performed perineal section,

and divided that part of the urethra in front of the prostate, and succeeded in passing an instrument into the bladder, accomplishing this by passing his finger into the rectum, and hitting the urethra anterior to the prostate. His urine will pass per perinæum still, and it will be a long time before anything can be done with the other portion of the canal, which will, no doubt, to some extent improve. He has suffered from infiltration of urine and its consequences. Mr. Cock knows of cases where no urine has passed through the penis for years, the patient being obliged to lie down to perform urination.

REMOVAL OF A STAPHYLOMA.

THIS was on a little child who had had purulent ophthalmia since birth, which destroyed the front of the eye from sloughing, engaging the whole of the cornea at that time. An effusion of lymph poured over the iris, the lens remaining behind the pupil, and a bulging forward ensued, constituting a staphyloma cornea, merely because it occupied this situation, although it had nothing to do with the cornea. Fragments of the iris are always found adhering to the back of the staphyloma, from its becoming stretched and unravelled; and such was the case here, on removal of the staphyloma by Mr. Bowman, on the 14th of March, at King's College. A small portion of the capsule of the lens was also adherent. Mr. Bowman observed that, in a case of this kind, he had two courses open for relief; the first was, excision of the entire globe—the common operation chosen for the last two years, as many as 60 or 70 having been performed by himself and Mr. Critchett, at the Royal Ophthalmic Hospital, not for malignant disease, but to relieve states of chronic disease, or disease producing sympathetic symptoms in the other eye. Nothing but the globe is removed, and in three or four days the patient gets well, and has an artificial eye put in. The other method is, excision of the staphyloma, which he here preferred, and is the old operation. The vitreous humour becomes covered with lymph, and becomes contracted, and a better stump will remain for an artificial eye than in the other plan, because all the muscles will remain attached to the globe, and hence will rotate the eye in every direction similar to the sound one.

Miscellaneous Correspondence.

ON SOME OF THE EFFECTS PRODUCED BY CARIOUS TEETH.

To the Editor of THE LANCET.

SIR,—The perusal in THE LANCET of the interesting practical lecture by Mr. Smith, of Leeds on the above subject, recalled to my mind three cases somewhat analogous to those related in Mr. Smith's lecture, which have come under my own notice during the last two years. Their true nature and obvious treatment did not occur to myself, and a statement of them may be useful to

some of your readers. The three patients were all young men, between the age of twenty-five and thirty years, and, curiously enough, they were all affected on the *left* side of the face.

1. R. S—, by occupation a coachman, footman, &c., to an old gentleman, called upon me two years ago to get something done for a sore on the centre of his left cheek. He said it had been a boil, which suppurated and broke about two months previously. His face was much swollen, and, as he had to wait at his master's table, it rendered him unfit for his work. The patient had consulted another surgeon, and had tried various remedies, but could not get it healed. He was otherwise the picture of health. I thought it might be some chronic affection of the parotid gland, strumous or otherwise. I gave him some zinc lotion to inject into the opening, and to apply a bit of rag dipped in the same, and covered with oiled silk. In about three weeks he came to tell me that the sore was healed, but his cheek was swollen. I gave him iodine to apply over it. There was an ugly cicatrix where the sore had been. In the course of another month the patient came again, presenting an abscess ready to burst in the old place. I opened it, told him to poultice it for a few days, and then use the former treatment. In about three months he called again, and told me that after he last saw me, being useless in his situation, he went home to Edinburgh, where he saw Professor Syme, who gave him something to use, and that the sore did not heal for six weeks after I opened it. The Professor told him that the sore arose from a wisdom tooth coming up, for which there was not room in the jaw, and advised him, if the sore did not heal, or should trouble him again, to have the adjacent tooth extracted. His face was now much swollen, and an abscess was evidently forming again. I examined his mouth, and saw that he had got the upper wisdom teeth only, and that there was evidently a want of space for those below. I accordingly extracted the second molar tooth, after which the swelling gradually subsided, and the wisdom tooth soon filled up the vacant space. He was now permanently cured.

2. Some months before I saw the last case, R. T—, a forester by occupation, came to me with a large abscess on the left cheek, about an inch above the angle of the jaw. I opened the abscess, and by using poultices for some days, and water dressing afterwards, the sore healed in about two weeks. Shortly after I extracted the tooth from case No. 1, I was again visited by No. 2. The abscess was now the same as before; but observing the similarity between the appearance of this case and the former, I examined his mouth, and saw that he still wanted the wisdom tooth in the left lower jaw, for which there was evidently no room, and the gum round about was a good deal inflamed. It so happened that a year or so before he came to me with the first abscess, I had extracted the second molar tooth in the right lower jaw for toothache, the place of which was now filled up by the wisdom tooth. I now ex-

tracted the same tooth on the left side, when the abscess broke into the mouth, and the wisdom tooth replaced the removed one as before. He has not been troubled since.

3. A. T—, a dealer in tea, consulted me four months ago for a swelling on his cheek. I found that an abscess was forming. The treatment and results were the same as in the other cases, with the important exception that, having recognised the nature of the case before the abscess broke on the cheek, I saved this patient from having an ugly cicatrix, as the other two unfortunately had, and will have as long as they live.

I am, Sir, your obedient servant,

ROBERT CRAWFORD, M.D.

Peebles, 1887.

TRUE AND FALSE PEPSINE.

To the Editor of THE LANCET.

As pepsine is now attracting the notice of the medical profession, both here and on the continent, I think I shall be doing a public service in drawing your attention to a spurious kind which is now offered for sale, and which is, as I believe, manufactured in this country.

I propose, therefore, to point out the characters by which the genuine article may be recognised, and likewise those presented by the counterfeit: and also to describe the chemical tests by which they may be distinguished from each other.

I have taken as the normal type the preparation originally introduced by Mons. Boudault, the manufacturer in Paris, the preparation of which was described by him in a paper read before the Academy of Medicine. The process employed by him consists in digesting the mucous membrane of the rennet-bag in distilled water, precipitating the pepsine by acetate of lead, and decomposing this precipitate by sulphuretted hydrogen. A solution of pepsine, nearly pure, is thus obtained, which is evaporated at a gentle temperature to a syrup; it is then mixed with starch, in such proportion, that fifteen grains of the resulting mixture shall possess the power of digesting one drachm of *dry* fibrin. The preparation generally used contains in addition a small proportion of lactic acid. The article sent into the market by Mons. Boudault presents the appearance of a light fawn-coloured, somewhat cohering, powder, possessing a peculiar odour and taste. When treated with cold distilled water and filtered, an amber-coloured fluid passes through, while the starch remains behind. The spurious article, however, is a coarse white powder, without either taste or smell; and, when treated with cold distilled water, partially gelatinizes, filters with great difficulty, and yields a solution perfectly colourless. The insoluble matter which remains behind, when examined by the microscope, consists apparently of a mixture of starch and animal membrane, which may be readily separated by washing with water, the starch remaining in suspension, the membrane caking together and sinking to the bottom.

Let us now examine these solutions with different re-agents. I shall, by way of distinction, call Mons. Boudault's preparation true pepsine, the other false:—

True Pepsine	Test	False Pepsine.
Abundant precipitate. (Peptate of lead.)	Acetate of lead	Slight cloudiness.
Ditto.		
(Tannate of pepsine.)	Tannin.....	Ditto.
Precipitates of pepsine.	Alcohol.....	No effect.

The solution of true pepsine is strongly acid to litmus, whilst the false is so only in a slight degree; but, more than all, Mons. Boudault's preparation does what it professes to do: fifteen grains digests its drachm of dried fibrin, while the spurious compound is entirely destitute of this property.

I am, Sir, your obedient servant,
P. SQUIRE.

Oxford-street, February, 1857.

P.S.—It may be well to observe, that M. Boudault confirms my experiments, especially the digestive test.

P. S.

CAMPHOR AND EPILEPSY (!).

To the Editor of THE LANCET.

SIR,—If you consider the enclosed worthy of publication, will you insert it in your Journal?

I was recently called to see a young lady, aged eighteen, whom I found with a most vacant expression of countenance, eyes wandering about the room, speechless, and powerless. The account given me by the person who was with her, was, that whilst sitting at the table writing, he perceived the table to be violently shaken. Thinking it was merely done for the sake of teasing, he requested her to desist; she, however, continued, and upon raising his eyes he saw that she was in a very strange way, and immediately sent for me. Shortly after I entered the room she had a violent epileptic fit, which lasted for about two minutes. She went into a state of stupor, and in about half an hour vomited freely, the matter rejected smelling most powerfully of camphor. I at once had her put to bed, and after administering an aperient draught she went quietly to sleep, and rested well all night.

On seeing her in the morning, she complained of violent pain in the head and chest, and still the taste and smell of camphor were most disagreeable; her mouth also was slightly distorted. I applied a blister to the nape of the neck, and gave some saline aperients, under which treatment she gradually convalesced.

I have since learnt that she had been playing with a piece of camphor, about the size of a marble, in her mouth, which she incautiously swallowed, and for some time previous to her attack was quite unconscious of what she did. She also tells me that two of her sisters have been

attacked with epilepsy from eating camphor. I should be glad to know if any of your readers have known camphor to have a similar effect. I do not remember to have seen or heard of any case.

I am, Sir, your obedient servant,
April, 1857. T. P. M.

A HINT FOR PHYSIOLOGISTS ON PHTHISIS AND CHANGE OF COLOUR OF THE BLOOD. To the Editor of THE LANCET.

SIR,—I beg leave to offer the following observations to your numerous readers, with the hope that some one may be induced to show that they are either right or wrong; for more has been written on consumption for the last 150 years than upon any other disease whatever, and yet the root of the evil has not been touched upon. We are now left almost as much at a loss as our forefathers were.

Phthisis is a constitutional disease, apt to occur during the virility of the person—say from fifteen to forty-five. It would therefore appear that the sympathy of the genitive nervous function has something to do with consumption; and let us remember one actual fact—viz., the arrest in the progress of phthisis in pregnant women, when the ovarian function is quiescent.

The remedy I would propose for consideration (not for practice) is *castration*. I would not propose it on Malthusian principles, but on the simple principle of saving life. The plan I propose is a most important one; it is one that produces very marked effects on animals. Then why not on our own species, when “the destroyer” begins to prey on their delicate tissues? Castrated animals are easier fattened than entire ones, and it is well known that the beneficial effects of cod liver oil in emaciating diseases of the chest is owing to its fattening properties. We have often seen patients who had every symptom of incipient and even advancing phthisis unexpectedly recover, sometimes by the use of medicine, and sometimes without any, which probably ought to be attributed to some new mental associations, and yet we have no physiological rule to guide us to a regularly successful treatment. I believe that Dr. Dover's old plan of bleeding has been too indiscriminately laid aside. I merely wish the above to be taken for what it is worth.

I beg leave to throw out another hint on the change of colour of arterial and venous blood; it will not materially affect the theory of the regeneration of the blood, but it will tend to strengthen the theory that *an animal being is a galvanic circle*. I would say then that the dark blood of the pulmonary artery (with its new acquisition), at the moment when it insinuates itself through the microscopical valvular capillary at the point where its cribriform tissue has access to the air (or oxygen), becomes that instant charged with electricity—the proof or test whereof is, its change of colour from dark to bright red: it is now arterial or electrified blood; and everybody knows that an electrified or magnetized body possesses very different

ferent properties from the same body whose electricity or magnetism is discharged. This arterial blood then traverses the heart and the whole body; but when it reaches its extreme destination at any part, it then insinuates itself through the valvular capillaries into the veins (being the other pole of the battery), its electricity is discharged, and the blood becomes dark and venous; so that our lives are made up of this charging and discharging of electricity, which is kept going by means of the nervous systems in decomposing air, food, and drink for that purpose. The torpedo and gymnotus are acknowledged to have this electricity in a concentrated state, therefore it requires but a small effort to believe that all animals possess it in different degrees.

I have (on May 17th, 1842) found and demonstrated the nervous system of plants. When those nerves were isolated in a peculiar manner, they showed symptoms very much like worms writhing in pain. I am, therefore, well satisfied that vegetables live and grow by means of their nervous systems, like animals.

I am, Sir, yours respectfully,

GWILYM.

Wrexham, 1867.

THE MARSHALL HALL METHOD OF TREATMENT IN ASPHYXIA.

DROWNING IN SOAP-SUDS.

To the Editor of THE LANCET.

SIR,—When Dr. Marshall Hall first published in your columns, his Ready Method of treating Asphyxia, I felt so convinced of the soundness of the views then promulgated, that I resolved to test them practically on the first occasion which should present itself. I had not to wait very long for an opportunity of doing so.

On the 31st of May, 1856, I was sent for express to visit a female child, aged two and a half years, said to have been drowned in a tubful of soap-suds. I had a distance of fully two miles to ride, and started with a feeling that my labour would be all in vain. Half an hour must at least have elapsed from the time the child was discovered in the water until I reached the spot. On arriving, I found the child stripped of her clothes, wrapped in a piece of flannel, reclining on her mother's knee, and people assiduously applying warm flannels to various parts of the body, accompanied with frictions. The child occasionally gave a sort of gasp or sob, with a slight quiver of the body; the eyes were projected, fixed, and the pupil dilated; the pulse could not be felt. The postural movement, with upward frictions, as recommended by Dr. Marshall Hall, were immediately commenced, and after forty minutes' continuance, respiration became more regular, but not so satisfactory as I could wish. The child began to moan occasionally, and attempted to cry; the pulse could be distinctly felt, though irregular; but the eyes continued in the same immovable state, with dilated pupils, as when I arrived.

In addition to the postural movements, &c. &c., cold water was dashed over the head, face, and various parts of the body. The child was then placed in a tub of hot water to the middle of the body, a cloth wet with hartshorn applied over the region of the heart, and cold water poured upon the head. Instead, however, of improving, the breathing became more irregular, and spasmodic in its character. The child was therefore, after being five minutes in the bath, removed, and the postural movements repeated and persisted in for half an hour. The breathing became more regular and natural, the pulse more distinct and firmer, yet the eyes continued in the same state as when I arrived. It was then evident that, besides the carbonic acid which might be retained in the blood, there was congestion of the brain, or some other state allied to it, which might be relieved by cautious depletion. A leech was fortunately got and applied to the head, with most decided relief, and, after a visit of two hours and a half duration, I had the pleasure of leaving the child in the enjoyment of a sound sleep, and in two days of seeing it quite well, after two or three doses of aperient medicine.

I could not find out how long the child had been under the water; all I could ascertain was, that it might have been one minute, but could not be more than five.

In the case of a still-born child, from breech presentation, on May 4th, 1856, I had the satisfaction of seeing the postural movements successful in restoring animation, after being persisted in for twenty minutes before the child gave any signs of life.

In a similar case, after a natural presentation on the 28th Jan., I failed in restoring animation, though the Ready Method was tried for thirty-five minutes. I might have continued the movements longer, but the mother required my attention for some time, and I deemed it vain afterwards to repeat them.

Until your last number appeared, I had no idea that any man or body of men, gifted with common sense, would have had any doubts of the propriety of following out the treatment recommended by Dr. Marshall Hall in all cases of asphyxia, for whatever cause. I have therefore contributed my mite to the list of cases already published, confirming the soundness of the views entertained and the treatment recommended by Dr. Marshall Hall, and trust that every medical man will see it to be his duty to follow out the Ready Method on every suitable occasion.

Apologizing for the extreme length of this communication,

I have the pleasure to be, Sir, yours sincerely.

WM. ALEXANDER, M.D., &c.

Dundonald, May, 1867.

ON A CASE OF IDIOPATHIC TETANUS.

To the Editor of THE LANCET.

SIR,—Having observed with great regret the contradictory opinions displayed by several medi-

cal officers at the celebrated trial of William Palmer, as touching the symptoms which arise from the administration of poisonous doses of strychnia, I trust you will not consider me obtrusive in wishing to record the particulars of a case of idiopathic tetanus which has just come under my observation, my chief object being to bear testimony to the correctness of the views on the subject established by Professor Taylor, of Guy's Hospital.

The particulars of the case treated by me are as follows:—Rungiah, a native, and by trade a hawker, was admitted into hospital on the 4th of March. He had completed a march of two hundred miles, slept when *en route* beneath trees, and was therefore exposed to much damp and cold, as heavy dews at night prevail in India during this season. On the completion of his march he complained of inability to swallow, of stiffness of the jaws and neck which gradually extended to the trunk and extremities, with the exception of the hands and wrists, which were perfectly free from spasm up to the moment of his death. On examination of the patient, I found the body in a state of opisthotonos; respiration laboured; pulse 90, feeble; paroxysms or fits of spasm increasing in severity every five minutes; no approach to an intermission, but merely a slight remission of the general spasm; countenance anxious, and the *risus sardonius* particularly marked; intellect clear; perspiration excessive; tongue furred, and bowels constipated. With great difficulty a powder of jalap, calomel, and croton oil, was administered, by which the bowels were freely relieved, and the intervals between the severe paroxysms somewhat prolonged, but no intermission of the general spasm of jaw, trunk, or extremities was once observable. On account of the great difficulty of administering solids, I ordered large doses of laudanum and ether to be given, applied hot fomentations to the extremities, and supported the system with brandy and ammonia; but notwithstanding the treatment adopted, the paroxysms gradually increased in severity, and death closed the scene on the fifth day.

Thus it will be observed that the symptoms of this case of idiopathic tetanus, and those which Cook experienced from the effects of strychnia, differed in the following important particulars—viz., the paroxysms came on and proceeded *gradually*; no approach to an *intermission* of the general spasm was observable, and the *hands* and *wrists* were free from spasm, whereas it will be remembered that just the contrary occurred in Cook's case.

Believe me, faithfully yours,
JOHN PEARSON NASH, M.D.,

Madras, 1857.

Madras Army.

News Items, Medical Facts, &c.

Two noble acts of personal heroism were performed last week within a few hours of one another, and in nearly the same place. On Tuesday (21st), a boy accidentally fell into the Regent's-

park canal from the parapet of one of the bridges. There luckily was passing at the time a labouring man, of the name of Samuel Smith, in the employ of M. Uzielli. Seeing the boy's peril in the deep water, he immediately plunged in and succeeded, with great difficulty, in saving him. On the following day, as Mr. Erasmus Wilson was passing in his carriage along the Albert-road, where skirts the canal, his attention was directed to female struggling in the water. Without more ado, he doffed his coat, plunged into the canal, and, after extraordinary personal efforts, attended with great peril to himself, succeeded in bravely rescuing the drowning woman—a poor old creature who, deprived of her parish weekly dole, had in despair, flung herself into the canal.

The same noble impulse that led the plain working man to spring to the rescue also impelled the educated gentleman to unhesitatingly plunge in and rescue a fellow-creature. It would be difficult to imagine a more beautiful illustration of the line in the grandest speech of Ulysses—*one so often quoted*, and so little followed—the

"One touch of Nature makes the whole world kin."

Lucky was it for the drowning boy and woman that their rescuers were both Leanders and heroes!

It is seriously asserted in the *Triester Zeitung* that M. Cavezzali, of Lodi, has succeeded in procuring silk from mulberry-leaves. The silkworm is henceforth to remain undisturbed in what Gibbon calls its "golden tomb;" and that may prove sober fact which Waller wrote as a flight of fancy—that

"Without the worm, in Persian silks we shine."

Having got so far, it will scarcely excite surprise if some enterprising philosopher announces that he has succeeded in overcoming the proverbial impossibility of making a silk purse out of a sow's ear, skinning a flint, getting blood out of a stone, or takin' the breeks off a Highlandman.

THE EMPEROR OF THE FRENCH AND BARON HUMBOLDT.—The Emperor, wishing to honour science in the person of one of its most illustrious representatives, has just conferred on Baron Humboldt, by the hand of Prince Napoleon, now at Berlin, the dignity of Grand Cross of the Legion of Honour, the highest attainable grade in the order.

REMOVAL OF THE NAUSEOUS TASTE OF COD LIVER OIL.—We find, in the *Répertoire de Pharmacie*, that M. Leperdriel advises, to counter the disagreeable taste of cod-liver oil, the addition to the latter of about ten per cent. of common salt. Not only does the salt render the oil palatable, but it causes the stomach to digest the oil more completely. All the fish oils may be masked in the same manner.

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**A Journal of British and Foreign Medicine, Physiology,
Surgery, Chemistry, Criticism, Literature, and News.**

EDITED BY

THOMAS WAKLEY, SURGEON,

**M.P. DURING EIGHTEEN YEARS FOR THE METROPOLITAN BOROUGH OF FINSBURY,
AND CORONER FOR THE COUNTY OF MIDDLESEX.**

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J. H. BENNET, M.D. T. WAKLEY, JR., M.R.C.S.

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MR. WAKLEY, M.P., EDITOR.

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IN TWO VOLUMES ANNUALLY.

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NEW YORK, AUGUST, 1857.

No. 2.

Practical Lectures.

ON THE

MANAGEMENT OF THE DIGESTION IN DISEASE,

*Delivered during the Summer Session of 1857, at
St. Mary's Hospital,*

By T. K. CHAMBERS, M.D., F.R.C.P.,

LECTURER ON THE PRACTICE OF MEDICINE AT ST. MARY'S MEDICAL SCHOOL AND PHYSICIAN TO THE HOSPITAL.

GENTLEMEN,—The term Indigestion or Deranged Digestion speaks to the mind of the physician of a very large class of morbid phenomena, various in their nature, and appearing under a great variety of circumstances. There are those who would banish the words from our nomenclature; some because the outward manifestations are so various that it is impossible to bring them together in any symptomatic nosology; some because the parts of the body whose morbid states induce deranged digestion are so many that it cannot be brought under an anatomical arrangement. It is quite true that a definition of it cannot be given according to the symptoms, and equally true that it cannot be called a disease of one part or of any set of parts or tissues. When external phenomena are made the principle of classification, those attendant on deranged digestion are so numerous and so discordant that they appear in every class; and if the organs that originate diseases are employed to give them names also, there are very few in the body which a pathologist could not assign as one whose morbid condition produces the disorder in question. Still, to the practitioner, and to the common sense of the non-medical public, the name has a distinct meaning, and is a definite guide to action. No nosological, anatomical, or even chemical considerations have prevailed over it, simply because it indicates a true thing, because it names a class having a connecting link in nature, though not in our artificial systems.

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The connecting link of the diseases of deranged digestion is a partial defect in the necessary supply of that of which the body is built up, before it arrives at the medium of distribution; they are *anterior* to assimilation and to the blood; they interpose between life and the new matter which it seeks to renew itself with.

This explains the fact mentioned above, and familiar to us all, of deranged digestion affecting more or less all the functions of the body, and producing such a variety of morbid phenomena as immediate or remote consequences. It perverts the incipient vitality at its very commencement, and therefore perverts all its future manifestations.

I am very anxious that you should have brightly pictured on your minds this idea of the position in pathology of diseases of digestion. It is of the utmost importance in your treatment of patients. There is no use in your pouring in remedies, however appropriate, for the removal of some morbid tissue of the body, if the new material which is to replace it is itself morbid in quantity or quality. While if you set to work in another way, and endeavour to provide healthy material, this itself will act as a remedy, even though other treatment should have been neglected. Make it an universal rule, then, that *the special medication is never to interfere with or take the place of the supply of life.*

In the management of deranged digestion, whether complained of alone, or occurring in other complaints, it is certainly important to know what organs are in any of the degenerated conditions which form the province of the morbid anatomist. Your prognosis and, to some extent, your treatment, is affected by such knowledge. But it is infinitely more important to observe the functional disturbances which are the immediate impediments to the healthy renewal of the body, and to learn how to modify them for the advantage of the patient. You may remember my pointing out in the hospital, the other day, with

respect to a consumptive patient in the corner of Cambridge ward, how little it helped us to know that half of the upper lobe of each lung was filled with crude tubercles,—pulmonary remedies had been of no benefit to him; but the reflection that the stomach was secreting an excess of mucus at the same time with the lungs, led to the relief of his progressive emaciation, cough and other distresses. I also, a few weeks ago, called your attention to a girl in Victoria ward, with the mitral orifice of the heart narrowed by rheumatic inflammation in childhood. On her being carried into the hospital, her face was like that of a corpse, and she could not stand without fainting from palpitation. I presume no sane student would expect to see remedies applied for the dilatation of that mitral orifice whose contraction is the source of evil; despair was not an illogical conclusion from the diagnosis, and I was but little surprised to hear the remark, that “at all events this is not much of a case for treatment.” Yet observation of the functional state of the alimentary canal, indicated by the œdematous tongue and fauces, made me express an expectation that she would walk home with colour in her cheeks. This she is able to do, and the better-nourished heart beats steady and even, though its mitral orifice is as small as ever.

On stating in consultation the diagnosis of some viscus being chronically degenerated, one is often answered by the remark, “Well, what is to be done?—we cannot cure that.” Very likely not; then try and find something else you *can* cure. In the great majority of your patients you may find this curable something in functional impediments to the entrance of nutriment into the medium of assimilation; and when you can once get nutriment in, it will act as the best medicine. Do not therefore despair after it has become certain that the principal viscus which gives a name and origin to the disease is incurable. And do not have any conscientious fancies that you are not fairly earning your fees in giving careful attention and advice. It is never too late to try and administer to the failing organ *the most potent of all medicines, the healthy human blood of the patient himself.*

The more I see of disease, the more convinced I become that the most important function for us to pay attention to in all cases is the digestion; in chronic cases it outweighs all the other functions put together. I am led to this conclusion not so much by physiological reasonings, or by the important position of this function in the great circle of life, as by observation of the effects of remedies, prescribed perhaps with quite different views, and often without any thought of the digestion at all. The effect of climate, for instance, in consumption is proportioned with extreme accuracy to the degree in which the absorption of food is improved or injured by it. I had a striking instance of this shown two months ago in the comparison of letters which I received at the same time about two young ladies that I had sent to pass the winter in a warmer climate.

The elder of the two (S. S.—) was last year much the most advanced in disease; half of the right lung was rendered impervious to air and immovable by tubercle, local inflammations, hæmorrhages, and pleural adhesions. She had also frequent dysmenorrhœa, and occasional menorrhagia. The younger (E. W.—) had a small deposit of tubercle at the apex of the right lung, which excited cough, but no hæmoptysis or pleurisy. She was the stronger and most muscular of the two, and had least right to hereditary disposition, for her immediate family are alive, while S. S.— has lost her mother by phthisis. Both had been under long courses of medicine by my direction, so I set them to begin the winter at any rate, and to go on as long as circumstances admitted, without any. What now is the result which I said struck me so forcibly? S. S.—, the most diseased anatomically speaking, who had certainly the greatest amount of morbid tissue in her body, found the warm air assist her sluggish circulation, enable her to take exercise, improve the appetite, and add unwonted energy and spirits. No food was passed undigested, and the evacuation from the bowels was regular in time and quantity. The consequences of which condition of the assimilating organs, bowels and blood, has been a most decided amelioration of the pulmonary local symptoms, in spite of an intercurrent attack of hæmoptysis. There is scarce any pain, cough, or dyspnoea; she has increased in strength and weight, and boasts in her letter that she had one day ridden her pony five-and-twenty miles. E. W.— had a tendency to a relaxed condition of the bowels—not absolute diarrhœa, but the passage once or twice a day of unformed pultaceous stools, containing a large quantity of undigested food. It was easy enough by medicines to prevent the motions being too frequent, but difficult to amend the assimilation of food. This diathesis seemed aggravated rather than improved in the mild climate; there was greater and greater inability to take exercise, then a return of pain and tenderness in the upper ribs, and at Christmas time the surgeon in attendance found a deposit of tubercle taking place at the apex of the left lung, in addition to what already existed in the right. Emaciation then commenced, and continuously progressed, quite unchecked by cod-liver oil and other expedients, which I thought it right should be tried, though without much expectation of success. In this patient my only hope is in a restoration of the digestive organs to a healthy state.

The remedy, the effect of which I thought was strikingly exemplified in this pair of cases accidentally reported together, is soft, warm air, in incipient consumption. The agreeable effects on the respiration, the relief of dyspnoea, the power of getting out in the open air, were equal in both, but how different has the result been?

These are not clinical lectures, so I will not systematically cite individual instances by name from those we have attended together, but a very moderate experience will soon enable you to class

a dozen or more as resembling in their type one or the other of those above quoted. The atmosphere of our well-ventilated wards, and their even temperature in comparison with the depressing coldness and chilly damps of the streets whence our patients come, represents on a small scale what Torquay, Madeira, and Algiers are to the wealthy. And you may thus as students see what private practice will still more strongly impress upon you, that the effect of climate on digestion is the most important part of its action. The atmospheric change alone without medicine will benefit those who resemble the first class, more or less, in proportion to the extent of their disease, whilst the latter will usually grow worse in spite of drugs.

In all forms of dropsy, again, the effect which you desire to produce by remedies is strikingly dependent on the condition of the alimentary canal. Where the portal system is congested, I have given that strongest of drugs, elaterium, in doses gradually augmented up to three grains, without any of the vigorous hydragogue action naturally following; and then, by applying a few leeches to the anus, so as to disgorge the abdominal veins, half a grain has produced excessive purgation with reduction of the dropsy.

Amongst common diseases, another striking example of the dependence of the character of remedies upon their influence over the digestion is found in anæmia. If, as generally happens, iron can be got to improve the condition of the alimentary canal, so that the stools, from being scanty, scybalous, and mucous, consisting mainly of wind and semi-digested food, become natural and regular, then the body is renewed by fresh nutriment, and the strength rapidly reinstated; but if it irritates the mucous membrane, so as to make the evacuation irregular, black, and slimy, your patient remains as anæmic as ever. Hence the importance of suiting to the case the different forms in which the metal is prepared. If its rapid solubility and exposure to the absorbing surface, so as to get a large quantity quickly into the system, were the only thing to be considered, the question of which is the best preparation might be left to the druggist. But it is not so; very often the easily-soluble salts so disturb the gastric mucous membrane that it refuses to pour out that secretion which is the chief solvent of albumen; the food passes unaltered into the intestines, and putrifying there, increases the disease. Whereas a sparingly soluble form of the medicament passes unaltered through the stomach, and exerts its main energy on the intestines. Again, some preparations, both soluble and insoluble, are more or less astringent, and have various qualities acting on various parts of the alimentary canal, which render them appropriate or not to individual cases.

It ought to be better understood that the fitness of any substance ingested, whether food or medicine, for its final destination, is not the only thing to be considered. Its capacity for entering into the circulation must be taken into account, and,

above all, its dynamic influence over the organs of absorption and digestion. As a general rule, iron is the chief agent we think of in anæmia. We think of it for its direct power of increasing the hæmatin of the blood. Yet it is by no means always the first, or even the best, remedy when the blood-discs are deficient from faulty assimilation. I remember when I was a student noting down as a paradox that salts and senna acted as a tonic in three cases running, where iron and bark and bitters had done no good; yet that I could not find in any work a tonic action assigned to purgatives. I then saw that the use of medicines was not entirely according to their rating in our books.

The fact is, that until you have removed the sluggish state of the portal circulation, which does nothing but secrete mucus and obstruct absorption, you cannot get the protein compounds taken up, and they form a much more important constituent of blood globules than even iron.

And it is not only the general health that is benefited by attending to the functions of the stomach, but even organs as far as possible removed from it in a physiological point of view. A patient consults me from time to time who has an enlarged prostate. When digesting well, his urine is quite clear, and free from mucus, even when microscopically examined; but if the stomach is disturbed by any imprudence or accidental illness, there is a copious formation of pus in the bladder.

I shall return to this subject when I come to speak of medicines separately; now I mention it merely as an accessible instance to show you how all-important in treating chronic disease is the condition of the alimentary canal.

In acute disease, too, you will be almost equally disappointed with the effects of your remedies, if you do not, either by their means, or by other means in addition to their administration, bring the alimentary canal into a proper state for their reception. In no cases is this more marked than in erysipelas and delirium tremens, and therefore you may have observed that I scarcely ever pass a bed in the wards containing a patient affected with one of these diseases without calling your attention to the fact. I point out to you that cinchona and wine are the proper remedies for the weak rapid pulse, the yellow pasty tongue, and the low inflammation of the skin in erysipelas; but that if you give these remedies without clearing away the saburral epithelium from the stomach and bowels, they are quite thrown away; the circulation continues as weak as ever, and the patient goes on advancing towards death. But if you have got a purgative to act, and are then in time with your alcoholic stimulants and bark, the corner is turned, and every change is towards health. I have often shown you, in the little ward where we put raving cases of delirium tremens, a man who has been taking large amounts of laudanum, morphia, and solid opium, yet is as rabid and demon-haunted as ever, his eyes never closing to the horrible visions

that surround him. But on giving him an efficient dose of salts-and-senna by mouth or rectum, these powerful opiates become no longer requisite; he goes off into a quiet sleep, sometimes without any more, sometimes with an ordinary quantity of laudanum, and the next day he is usually calm enough to be removed to the common wards.

Now, do not misunderstand me, or suppose me to have turned "purgative-doctor," recommending an artificial diarrhoea as a panacea; on the contrary, I am anxious to warn you that there are acute cases where a purged state of the alimentary canal, natural or artificial, is most injurious. I would instance especially pneumonia and low fever. In the first, tartar emetic and cupping are beneficial just in proportion as the bowels are not purged; and if you give a cathartic, you very often destroy all the good effect of your remedies. In adynamic fevers, the prognosis may be almost entirely governed by the average proportion of solid matter to the liquid in the stools, and by the degree of digestion of food. Any expedients which increase the amount of solid and diminish the liquid intestinal evacuations, any which promote the taking up of nutriment by the mucous membrane, are doing good; any that act in a contrary way, do harm.

In pneumonia and low fevers, three quarters of those who die, die of starvation. I mean that the real immediate cause of their death is the non-renewal of the blood by the supply of fresh matter. Both veins and arteries are filled with a dark, half-dead fluid, a great portion of which is incapable of fulfilling the functions of life at all. Expose this black blood to the air, and it remains nearly as black as ever. No oxygen will redden it, for it is too dead to imbibe oxygen, and it is only fit to be evacuated. But then, when it is evacuated, something must supply its place; new blood-disks capable of living and absorbing oxygen must be made, or the patient dies. Now, if you think only of getting rid of this dead matter by blood-letting and other evacuants, or if you think only of arresting the rapid destruction of the still living matter by alcohol, you are taking an imperfect view of your duties and not doing all that may be done to rescue the patient. At the same time that you fulfil the other indications, it is your business to adopt expedients for promoting the supply of nutriment to the absorbents.

That is not to be accomplished by throwing in a large quantity at once, which decomposes and stops digestion before it can be digested. The alimentary canal either rejects or suffers from such treatment, and is all the more starved by the very abundance, like the Roman girl in Livy's legend, who was crushed to death by the stipulated rewards of her treachery.

The way to attain your object is to give very small quantities at a time and very frequently, so that a continuous flow may be kept up through the alimentary canal without overburdening it. The system of a patient laid up with acute disease is like that of a new-born infant, in the weak

hold it has of life, and in the constant support it requires; and the stomachs of the two resemble one another in the insufficiency of the meal they can take at once to satisfy their wants for the time usual for adults. Treat them, therefore, in the same way; and as in proportion to its youth you order an infant to be fed frequently, so in proportion to their illness feed frequently your sick patients. A person prostrated by a fever, or by inflammation of an important vital organ, such as the lungs, for example, ought not to be more than two hours without food while awake, and I have not unfrequently administered it in doses of a few spoonfuls every hour, night and day, with decided advantage.

You may take a lesson, too, from the nursing of infants as respects the nature of the food: milk is the most perfect you can give. The only disadvantage is, that the caseine may be suddenly coagulated all at once in the stomach, and then, instead of passing on gradually, it has to remain there till enough gastric juice is secreted to dissolve it, and enough energy exist in the peristaltic muscles to move the mass onwards; till which time it stops the way. The better plan, therefore, is to mix sufficient lime-water with it to prevent any large quantity of lactic acid being free; much of the milk will then pass the pylorus uncoagulated, or at any rate in very small coagula, and be digested by the intestinal juice, with no labour to the stomach.*

You saw, a month ago, in the Victoria ward, a striking instance of the effect of mere nutriment so administered as to be capable of being absorbed in acute disease. A young woman, the subject of pulmonary tubercle, became affected with pneumonia of the whole of one lung. Her lips were livid; the pulse uncountable; the respiration irregular, and between forty and sixty in the minute; there were râles from the collecting of mucus even in the bronchial tubes of the unaffected lung; the tongue had a smooth yellow coat; and the repugnance to food was very great. She had up to this period had nourishment given, or rather offered, only at the usual time of meals. She had had some stimulants, but they had been thrown up. I then ordered her a pint and a half of beef-tea, and two pints and a half of milk guarded with a pint of lime-water, to be taken, a small portion at a time every hour, so as to finish the whole in twenty-four hours. The next day a sudden revival had taken place: the tongue had cleaned; the respirations were about 25 or 30; and so she continued to hold on to life for five days, when a relapse occurred and she died. Now, it seemed pretty clear that death would have occurred from the first condition in which the patient was seen by you, except for the continuous supply of nutriment. I cite this case rather than any of those where final recovery takes place, because in them you might doubt whether the disease really is of a necessarily fatal nature; whereas here you have

* On the action of the intestinal juice, see "Blüder und Smidt: Die Verdauungssäfte (von Darmkraft)," and "Digestion and its Derivations," by the author: book I., chap. v., sect. 4 and 5.

proof of the fact in its killing the patient soon afterwards. It was of a fatal nature, yet death was arrested for a time; and the sharpness of the symptoms made the changes more striking than in patients where your memory has to cast back for days, or even weeks, in order to trace the effect of treatment.

Another case, now convalescent, in Albert ward, illustrates a still more purely dietetic treatment of acute disease. I mean a young man in bed 15, who was brought in three weeks ago with low fever, his tongue dry and brown, rose spots on the skin, weak fluttering pulse, and the stools smelling like rotten flesh. The only drug I ordered him was a small quantity of grey powder at night, and some effervescing saline draughts. You have often seen under such treatment the fetor of the stools continue, and great weakness follow, even in those fever cases that ultimately get well. But I ordered at the same time a diet of milk and beef-tea, to be taken in small quantities every hour, and a few ounces of port wine. To assist the absorption of this nutriment I gave him also a scruple daily, divided into three doses, of a powder containing pepsine; and I was curious to know what the effect would be on the digestion, for it was the first time I had given it in low fever. The result was most encouraging—for the stools immediately lost their putrid fetor, and the food, instead of being passed in a putrid undigested state, seemed to be entirely consumed in the bowels. In spite of several discouraging symptoms, I have never seen a case of bad fever where the stools were so little fetid, or where there has been less consequent emaciation and debility.

My object in this lecture has been to lead you, in your clinical studies under us in the wards, and also in after life, to observe the importance of the management of the digestive organs in disease. I mean in disease generally, and not in that which specifically affects those organs alone. And, in future lectures on the same subject, I intend the descriptions I give of morbid phenomena, and the simple classes into which it is convenient to divide the impediments to digestion, to apply equally whether they are alone, and give a name to the illness, or whether they are united to anatomical changes which afford a more convenient generic designation.

Do not be deceived by the expression, "merely symptomatic," sometimes applied to the derangements of digestion in phthisis, anæmia, amenorrhœa, dropsy, hysteria, &c., such as I have cited for illustration. All parts and functions of the body are so knit together to form the great circle of life, that the comparative value to individual existence is more a question of time than of power. The failure of any one shortens the days more or less. The great advantage of paying special attention to the digestive organs is that, as a general rule, they are more directly curable, and that by their means distant parts, otherwise out of our control, may be favourable influenced. The evil of neglecting them is apt to be disobedience of the disease, or rather of the body of the patient, to

any drug administered; recovery rather in spite than by reason of it; and in a candid mind the development of medical scepticism.

I shall in the lectures that follow, give as concise a sketch as I can of the various modes in which the function of digestion is deranged, both alone and in connexion with other diseases, pointing out as I go, what rational indications of treatment they afford. I shall afterwards go through some of the principal reagents used to effect our purposes, and tell my experience of their various advantages and disadvantages.

A Clinical Lecture

ON

SPASMS OF THE EYE AFTER EXTRACTION OF CATARACT.

Delivered at St. Mary's Hospital,

By WHITE COOPER, Esq., F.R.C.S.,

OPHTHALMIC SURGEON TO THE HOSPITAL.

GENTLEMEN,—In my former lecture, the subject of hæmorrhage from the eye was considered; I now propose to speak of another obstacle to success after extraction—namely cramps or spasms of the muscles of the eyeball.

If you observe the mode in which these muscles are arranged, you will see that any sudden and powerful contraction of them must inevitably compress the eye—an accident calculated to seriously disarrange the parts concerned in extraction, pushing the iris between the edges of the corneal section, preventing its union, and giving rise to a train of symptoms productive of great sufferings to the patient, and frequently interfering with the success of the operation.

This accident is but little referred to in books, yet it is far from uncommon. My note-book contains not less than a dozen instances, from which I shall select three, as marked illustrations of the accident and its results.

CASE 1.—On Sept. 27th, 1852, at four P. M., I performed extraction on the right eye of Miss J—, a maiden lady who for years had lost the use of her lower extremities from paralysis, and was a great sufferer from rheumatism and neuralgia. The operation was performed under chloroform, but the effect was not satisfactory; though unconsciousness was produced, irritability of the eye remained, so that the eyelids resisted, and the eye was much inverted. Every care was taken not to hurry the section, but there was so much spasm that the lens was shot out, together with some vitreous humour, the instant the flap was completed: the flap was at once adjusted, the lids closed with a strip of plaster, and a light bandage applied. The effects of the chloroform soon passed away, and the patient remained quiet on a sofa.

I happened to be sitting in the room at eight P. M., whilst the patient lay dozing, when she suddenly sprang up with an exclamation that

some one had struck her eye, though certainly nothing of the kind occurred. She was much agitated, and it was difficult to convince her that a blow had not been inflicted. She described her sensation as that of a violent blow on the eye, which had burst it, there being intense pain and a most vivid shower of sparks. I immediately gave her a full dose of tincture of henbane with Hoffman's anodyne, in camphor water, and she gradually became tranquil; there were slight returns of the spasm during the night, and again during the following day, the sensation being as if the eye were grasped and drawn back into the head, vivid coruscations attending each attack.

The eye was ordered to be soothed with a lotion composed of extract of opium, extract of henbane, and extract of poppy, half a drachm of each to eight ounces of water, and the sedatives were repeated every four hours.

During the week, Miss J— was much tormented with neuralgia of the eye, the brow, and the cheek, requiring the free use of anodynes; and on the fourth day the unmistakable cedematous swelling of the upper lid confirmed the opinion I had formed, that serious prolapse of the iris must be the consequence of the repeated spasms and compression of the eye.

On the seventh day, I ascertained the condition to be as follows: The corneal section was widely separated, an extensive prolapse of the iris filling the gap and obliterating the pupil; there was a considerable blush in the eye, indicating the commencement of inflammation. To subdue this, leeches were applied, but ere the day closed my anxieties were increased by an unlooked-for complication, the patient being attacked with violent abdominal spasms and complete stoppage of the bowels, which became enormously distended.

Dr. Handfield Jones now saw this lady, and was of opinion that the bowels were in a semi-paralytic condition. He prescribed the sixteenth of a grain of strychnine thrice daily, and directed the abdomen to be thoroughly rubbed with an ointment of belladonna and opium. This treatment was attended with the happiest effects; the spasms subsided, and on the third day the bowels were fully opened, an aloetic purge bringing away a quantity of dark offensive matter.

It is unnecessary to trace the daily progress of the case—it would be a weary detail of suffering extending over many weeks. The neuralgia, which is always present when there is prolapse of the iris, was here aggravated by the idiosyncrasy of the patient. Not only was there intense pain in the neighbourhood of the eye, but also neuralgia in the back, and even in the lower extremities, which could only be subdued by the liberal use of opiates. No diminution took place in the prolapse of the iris, and deep-seated sub-acute inflammation gradually extinguished the perception of natural light, though luminous coruscations were a frequent source of annoyance.

At the expiration of two months, finding the

corneal flap still projecting like a staphyloma, the gap being filled by the iris, I determined to puncture this, to allow the distending fluid to escape, and then to apply a compress. The instant the puncture was made, a jet of fluid was expelled, and the projection sank; but such an attack of spasms, not only of the eye, but of the whole frame, came on, that I was really alarmed; there were cramps in the limbs and spasms in the abdomen, and the patient could only breathe convulsively. I immediately gave a full opiate, combined with chloric ether, and the patient gradually became tranquil. A compress was now applied to the lid, and gentle pressure kept up for a week. Great improvement in the form of the eye resulted, and there was marked relief as regards pain, but the atrophy of the eye and complete extinction of the perception of light, precluded any attempt being made to form an artificial pupil.

CASE 2.—I performed double extraction on a lady advanced in years on the 20th of December, 1856. For many years she had been a great sufferer from rheumatism and from neuralgia, but this fact was not mentioned till after the operation; on the contrary, I was led to believe that she had enjoyed excellent health. During the operation, there was unusual spasm of the eye, causing me to complete the sections very slowly. The lens was removed with facility from the left eye, and there was no escape of vitreous humour, but in spite of every precaution, the spasm of the right eye was so strong that the moment the section was completed the lens leapt out, together with a portion of vitreous humour. The flap was immediately adjusted, and time allowed for the spasm to subside. When the eyes were finally closed, both pupils were circular and the irides in their natural position.

This lady passed the following night and day well, but at eleven o'clock on the second night I was sent for, and found my patient in great pain and agitation. She stated that half an hour previously she had given a short sharp cough, and instantly felt a sensation as if the right eye had been violently squeezed, with vivid colours and brilliant sparks. I at once gave her a full opiate, and carefully fomented the eye; the pain gradually subsided, she passed a fair night, and both eyes were going on favourably the next day; but again I was sent for at night, and this time found that a servant had clumsily thrown down a clothes-horse, over which a green baize had been thrown to exclude the light of the fire. The patient awoke in great alarm, and was seized with violent spasms and scintillations in both eyes.

This was sufficient to convince me that there would be trouble here, and my expectations were fully realized; for though there ensued but little cedema of the lids, and but a moderate amount of neuralgic pain, seven weeks elapsed before I was able to obtain even a glance at either eye. The slightest attempt to raise the lid produced such a spasm that I was compelled to wait patiently until the irritability subsided, for subside I knew it

would in time. My patient was a very peculiar and intractable person; so that, on the whole, I never remember a more trying case. And what was the result? Slight prolapse of the iris in the left eye, but good pupil and fair vision, which is steadily improving. The section in the right eye united, but the pupil was closed, and the globe has somewhat diminished in size. To have saved one eye, under the circumstances, was almost more than I expected, for my instructions were seldom obeyed by the patient. For instance, I had prescribed some medicine to be taken twice in the day. The following day I asked if it had been taken as directed. "Why, no," was the reply, "I did not like the trouble of taking two doses, so I took the whole quantity at once!"

CASE 3.—On October 21, 1856, I performed extraction in this hospital on the right eye of Mrs. G—, and removed without difficulty a remarkably dense capsulo-lenticular cataract; for four days she progressed well, but on the fifth she happened to be asleep when I entered the ward, and the nurse abruptly woke her. Startled, she jumped up hastily, and immediately complained of her eye, which seemed (she said) violently squeezed, and pulled back in her head. The occurrence vexed me, knowing the probability of the section being disturbed; but I directed that the eye should be well and carefully fomented, prescribed a sedative draught, and desired the patient to keep perfectly quiet. Nevertheless, the lid began to swell, with a sensation as if a pea were under it—unmistakable indication of prolapse. On the seventh day I examined the eye, and found large protrusion of the iris, and considerable inflammation. Six leeches were applied with marked relief, and frequent fomentation ordered, and in the course of a few days the redness subsided. The eye was kept almost constantly closed for a month, and the prolapse was twice touched with nitrate of silver; some irritation followed the second application and it was not repeated. Belladonna was used, and gentle pressure by means of a soft compress and bandage was applied with some advantage, but notwithstanding all my efforts, the iris did not retreat sufficiently to admit of the pupil recovering itself, and useful vision was for a time suspended. I say suspended, because in this case there was not sufficient inflammation to permanently injure the eye, and the closure of the pupil was the only obstruction to sight. Here an artificial pupil can be made with great facility, and there is little doubt of vision being restored.

The symptoms then, gentlemen, of spasms of the muscles of the eye are, sudden acute grasping pain, with a sensation as if the eye were drawn back in the socket, generally attended with coruscations of light and colours, the result of compression of the retina. In the majority of cases it comes on within the first thirty-six hours after operation, generally during the brief interval between sleeping and waking, or just when the patient is dropping off to sleep, and is most marked in persons who have suffered from dis-

turbance of the nervous system, as indicated by neuralgia, spasms, and cramps.

The immediate indication is to tranquillize the nervous system, and this object is best attained by a soothing cordial draught, composed of thirty drops of Hoffman's anodyne, twenty drops of Squire's solution of bimeconate of morphia, and a drachm of the compound tincture of lavender, in an ounce of water. In some cases I have given six or eight drops of the tincture of Cannabis Indica on a lump of sugar with excellent effect. The most grateful application to the eye itself is a fomentation of hot water, but in using this the utmost gentleness is necessary, the irritability of the eye being so great that a very slight touch will often bring on a return of the spasm. For the same reason, it is preferable to darken the room, thoroughly excluding the light from the patient, rather than to irritate the eye by compressing it with bandages. And here let me give you a hint: never allow a looking-glass to remain in the patient's room. I have several times known much annoyance caused by a gleam of light falling on a mirror, and reflected to the patient's face; for the same reason have any chinks in the shutters stopped up; more mischief may be done by a bright ray of light streaming through a crevice, than by a considerable amount of general light, gradually admitted.

It must be borne in mind that, for the better illustration of my subject, I have selected the most marked cases in my note-book. It by no means necessarily follows that destruction of the eye should follow spasms of the muscles; the immediate effect will almost certainly be disturbance of the section and prolapse of the iris. The prolapse may, however, subside, or not be sufficiently great to interfere materially with the success of the operation; or again, if the prolapse be so considerable as to cause obliteration of the pupil, vision may still be restored by an artificial pupil.

Prolapse of the iris will be indicated by a slight cedematous swelling, commencing at the inner canthus, and stealing along the margin of the upper lid; the lid becomes exquisitely tender, so that the patient shrinks from the slightest touch, and there is generally the sensation of a foreign body under it. There is a copious discharge of scalding tears, the patient avoids light and the slightest movement of the lid. If you do manage to raise the lid, you will find the cornea thrown upwards, and there will be more or less redness of the conjunctiva and sclerotic; simultaneously with these local indications the patient will complain of aching over the brow, extending down the side of the nose and cheek-bone, which is tender to the touch; the pain is aggravated at night.

The treatment which I believe to be best for prolapse of the iris is, first and above all, absolute quiet of the eye; the least handling or attempt to open the lids almost certainly brings on a return of the spasm, and of course keeps up the mischief. The object we should steadily keep in view is, to allow the iris to recover its position,

and the section to become firm. The utter inability to raise the lid points out that Nature requires it to remain closed, in order that she may perform her work.

It is generally recommended that the prolapse should be touched with nitrate of silver. In some cases I have seen this useful, in others hurtful; and on the whole, I am of opinion that time and quiet will attain the great object better and with less hazard than the use of the caustic. I remember a case in which I assisted the late Mr. Dalrymple. Three weeks after extraction the eye remained irritable, there being a small prolapse, but sight was returning favourably. Wishing to hasten matters, Mr. Dalrymple touched the prolapse with caustic: violent pain came on, subacute inflammation followed, and the eye was lost. I believe that he used caustic no more in such cases.

Time and quiet, then, are the main agents in the cure of prolapse of the iris; when the cicatrix is forming, advantage may be derived from the use of belladonna; and if there be congestion, the application of a leech or two from time to time will be serviceable. There is one thing, however, which we are called upon to ameliorate, and that is the frontal neuralgia. An ointment, composed of one drachm of extract of opium to four drachms of strong mercurial ointment, well rubbed in at night, is often efficacious; but I have found still greater relief afforded by painting the painful surface freely with a lotion composed of one grain of nitrate of silver dissolved in half an ounce of nitric ether. This sometimes acts like a charm in removing the pain. Another useful application is chloroform thus applied: a layer of cotton-wool is to be spread over the forehead, then sprinkled with chloroform, and covered with oiled silk. The vapour is thus confined without coming in contact with the skin.

There is a point in the after-treatment of cataract cases to which I would draw your attention—namely, the importance of avoiding any sudden startling of the patient, especially from sleep; as I look back upon the cases in my practice in which there has been prolapse of the iris, I may ascribe this mainly to two causes—the eye being struck, or the patient being startled. It is not necessary that there should be a real blow; a mere touch will be sufficient to cause a sharp action of the muscles of the lids and of the eye, and so the flap may be displaced. When, therefore, the eye is being cleansed, the patient should always be warned when the sponge or rag is going to be applied, for if not so prepared, a start will generally take place, and the eye may be struck.

I have described in case 2 the consequences of an alarm caused by the clumsiness of a servant. Impress upon the attendants the importance of quiet, and the most rigid attention to your instructions. These must be laid down with precision, especially when you have not the assistance of a nurse experienced in the management of eye cases.

Croonian Lectures,

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS, 1857.

By G. OWEN REES, M.D., F.R.S.,

PHYSICIAN TO, AND LECTURER ON THE PRACTICE OF MEDICINE AT GUY'S HOSPITAL.

LECTURE III.

DIATHESSES: URIC, OXALIC, SACCHARINE. DIABETIC SUGAR *not* THE SAME AS THE SUGAR PRODUCED IN THE LIVER IN HEALTH. THEORIES.

MR. PRESIDENT,—I am now desirous of making a few remarks on the subject of diathesis as connected with what have been called by way of distinction, “urinary diseases.”

It should be remembered that the urine can only be regarded as an indicator of the general state of system, when we have it as it is secreted from the kidneys, and that any changes which may be effected in it after it is secreted, are more or less the results of local actions occurring in the tubes and receptacles through which it has to pass before it is evacuated by the urethra. It is not too much to say that this point has been sadly overlooked. We find scarcely any notice taken of it, except in diseases characterized by the escape of large quantities of very obvious substances from the bladder as the result of severe or long continued irritation. Now it is of paramount importance to determine the nature of the changes occurring after the secreted urine is received into the channels destined to conduct it out of the system, before the question of diathesis can be satisfactorily considered. The consequence of our having neglected this part of the subject is that we have become fixed in error, and habituated to the use of a jargon having little or no meaning in its application to disease. Every abnormal constituent discovered either as a deposit or in solution in the urine has been eagerly caught at as the index of some general condition or diathesis, and urinary pathology has been worked up into a state of confusion indicating in itself that some grave error has lain at the root of the system. It is especially with respect to deposits that this dire confusion has prevailed, and I would now wish to attempt the simplification of the subject, by reverting to views which I have at different times promulgated, but have not until now ventured to put in any very decided form.

In the lectures I had the honour to deliver last year in this theatre, I made the statement, that, were it not for the uric acid diathesis, urinary calculus would be as rare a disease as tetanus, and I traced the existence of oxalate of lime and of the earthy phosphates in the urine, or as constituents of calculi, to changes effected after secretion. I showed how urine containing the urates was convertible, out of the body (by the application of an increased temperature), into urine containing a deposit of oxalate of lime, and I adduced facts and arguments showing that the presence either of uric acid or the oxalate of lime in

the urinary canals would lead to inflammation of the mucous surfaces and the consequent effusion of an alkaline fluid, and that this would cause a precipitation of the earthy phosphates. All these evils were regarded as dependant, so far as the secreted urine was concerned, on the presence of an excessive quantity of uric acid or of an urate in the blood, and therefore on the *uric diathesis*, notwithstanding that the urine, as evacuated, and after passing over the mucous surfaces, might deposit *oxalate of lime* or *earthy phosphate*. The oxalic and the phosphatic diatheses were ignored, the uric acid diathesis being the only one recognised.

It is obvious that if the above be true, an entirely new view of treatment must be taken. The kidney, in fact, must be regarded as always secreting an acid urine, unless ingesta (in the form of food or medicine) be given to change its character.

An utter neglect of the pathology of the urinary mucous membrane has led to all the perplexity in which the question of phosphatic disease has become involved. The experiment I made in the case of a patient with deficient anterior abdominal parietes, as detailed in former lectures, showed how easily the secreted urine had its acidity neutralized, as it flowed from the ureter over an inflamed mucous surface. The crucial experiment also detailed, of causing a patient who was passing alkaline urine, to pass urine of acid reaction, by administering alkalies, is, again, quite conclusive as to the mucous surfaces being in fault, and as to their possessing the power of changing acid urine to alkalinity when in an inflamed state. Let us follow this change, and describe the therapeutical action of alkaline treatment. We will suppose we have (as I have often had) a patient afflicted with the uric acid diathesis. He tells you his history: how he passed red sand in quantity, and perhaps a small calculus escaped from his kidney and found its way through the urethra. This state of things, after a time, he may say, changed. He began occasionally to pass *alkaline urine* and the *phosphates*. Sometimes during the same day he will tell you he has passed both red sand and the phosphates. Old sufferers have more than once brought me specimens of such deposits. He may tell you his urine next became almost constantly alkaline: that acids in every form were administered, in order to obviate this, but that he has gone on from bad to worse. The bladder you will find is now involved, and if he have no calculus there, it is not the fault of those who have prescribed acid treatment.

Now here we have a man passing an alkaline urine; there is phosphatic deposit, and two views may be taken of his case—the one, that long disease had caused the phosphatic diathesis to appear, and that the urine is secreted alkaline by the kidney; the other view being, that the uric acid diathesis is still present, and that the mucous surfaces have become inflamed, and are neutralizing, by their secretion, every drop of urine, and thus the phosphates are precipitated. According

to the first view, an acid plan of treatment might be beneficial; according to the second, alkalies are indicated.

Let us put the case to proof. We give small doses of citrate of potash. These are to be carefully administered, and as the case improves, the dose is to be lessened. During this treatment, the urine still continues alkaline, but the earthy phosphates appear in less quantity. They are gradually being held in solution by the bi-carbonate of potash which exists in the urine, owing to the destruction of the citrate in the system. The urine is now secreted of alkaline reaction, and the inflamed mucous surfaces being no longer irritated by an acid fluid, gradually recover themselves, and eventually cease to pour out their alkaline liquor, and we obtain from the urethra the healthy and acid secretion of the kidney. There is no conceivable theory bearing reference to the phosphatic diathesis of Prout and his followers which can explain this result.

The existence of an uric acid diathesis is a matter now proved—that is to say, we have satisfactorily established the presence of a state of system in which uric acid and its combinations appear in the blood in abnormal quantity. This, which was long matter of belief, has been clearly demonstrated by the experiments of Dr. Garrod; and to the presence of uric acid in the blood I believe we may trace nearly all the evils to which calculous subjects are liable, for those constituents of urinary calculi and of urinary deposits, which do not admit of being traced up to its presence, are extremely rare—viz., cystine, silica, uric oxide, &c. Regarding diathesis as expressive of a power or force predisposing the organism to some especial form of disease, I propose next to consider a state of urine which has been considered indicative of a diathesis, but which, I believe, bears no relation whatever to an especial disease, but is produced by many. In every case, however, it has reference to one and the same action taking place in the organism—viz., emaciation. Writers have described the excretion of an excess of urea as an urinary disease, as an affection not necessarily connected with any organ or organs of the body, but having reference to a peculiar state of system not of necessity engrafted on any organic affection capable of detection by physical examination or by symptomatology. According to this view, in fact, the urine containing an excess of urea is the disease, and the therapeutical considerations are to follow without further inquiry. Such has been the practice in these cases, and the patient has had the gratification of knowing he suffers from azoturia, or excess of nitrogenous matter in the urine. With this he of course connects no idea whatever, nor is it desirable he should; but the misfortune is, that the profession have had quite as little acquaintance with the subject as the patients, which is also not very desirable.

It is now some years since I first had my attention directed to these cases. By degrees I learned how extremely rare this diseased state of urine

was in anything like an excessive form. The cases I saw, it is true, yielded an urine of high specific gravity, and very rich in urea; and I found a state of debility which might or might not be removed by remedies, and in the one case that the urine improved, and in the other it did not. Lengthened observation showed me, that many of these cases did badly; symptoms of grave disease occurring, and phthisis or other organic mischief showing itself at the close.

It naturally occurred to me, under these circumstances, to suspect that this azoturia was nothing more than a symptom, not of any especial form of disease, nor of any diathesis, but of a condition common to many diseases. When emaciation occurs, then, from any cause whatever, we may expect to find this azoturia present. The advantage of detecting it is great, if it be regarded in its proper bearings; but if it be looked upon as a disease *in itself*, the practitioner had better far be without the discriminating power on which he may pride himself, inasmuch as, content with his discovery, he may cease to inquire into the case as he would do were his attention less fixed on the urine.

It has several times happened, that I have seen patients who were described as suffering from azoturia. The urine has been observed carefully, the quantity passed during twenty-four hours, and the specific gravity, noted daily, and the cause of the disease considered to consist in the prevalence of a peculiar diathesis. The patients have presented all the peculiarities which systematic writers describe as indicative of this drain on the system. On inquiring into such cases, however, I have nearly always been able to discover some more or less localized disease to which all the symptoms might be traced—some disease attended with emaciation, and therefore, as a consequence, productive of the highly-animalized urine. It is not very long ago that the symptom of azoturia so engrossed the attention of an examiner of the urine, and so entirely connected itself in his mind with a peculiar diathesis, that advanced, and eventually fatal phthisis was entirely overlooked. This occurred in the case of a gentleman, pursuing professional avocations with great zeal, and who, observing his muscular power gradually on the decrease, became anxious as to his condition. The urine was examined, and declared to indicate azoturia; unfortunately, that discovery was considered, as it has been constantly considered, and is still considered, sufficient guide to treatment. In consequence of this, physical examination of the great cavities of the body had, I found, never been carefully made. Here, then, the indications of phthisis, so important to detect at an early period of the disease, altogether escaped notice. As consumption advanced, the azoturia became aggravated, and I was eventually called in merely to condemn the case as hopeless.

The emaciation sometimes occurring during chronic disease of the brain, is also attended with this discharge of an additional quantity of solid matter; and if the state of the urine distract at-

tention from the true seat of disease, great mischief may be done, as the remedies in vogue for the relief of azoturia—viz., opiates and other narcotics, are such as often greatly aggravate the cerebral affection. In certain neuralgic cases also, this urine indicative of wasting is met with. Here, however, the error does not lead to much evil; the patient may be treated according to the rules prescribed for azoturia with advantage, and if the neuralgia (as is very likely) be relieved by opiates, the theory of diathesis, perhaps, may be considered supported by the results obtained, and the neuralgia thought to have depended on azoturia. I saw a case of this kind lately, which is now going on well enough, under the treatment which was adopted in order to remove the tendency to a large excretion of urea. The neuralgia and the azoturia will, I fear, however, in this case, eventually be shown to have depended on some obscure internal disease, which physical examination is at present unable to detect.

When examining the specific gravity of urine, I would caution observers not to conclude that healthy urine is never passed much above the specific gravity of 1022, and that anything above 1026 or 7 must necessarily be regarded with suspicion. Nearly all healthy men pass, at some period of the day, an urine above the highest point just mentioned, and very often, *shortly after a full meal*, the specific gravity rises to 1030 and 32. This, too, will occur in persons of great mental and physical activity, and when in the enjoyment of the highest health.

I must not omit to direct attention to the cases which have been quoted at different times as illustrative of azoturia. They all, as far as I have been able to discover, contain a narration of symptoms favouring the position I have taken. They speak of pains of a severe character in various parts of the body, and these are in many instances accompanied by other indications highly suggestive of important latent disease.

When speaking on the subject of diathesis, I cannot refrain from introducing some remarks having reference to the subject so ably treated in the Gulstonian Lectures of this season. The old classification placing diabetes amongst urinary diseases has so completely held sway up to the present time, that the subject of the saccharine diathesis naturally suggests itself in this place. Those who have studied the works of Prout will be familiar with the idea that chemists connected with the term "saccharine diathesis," and cannot fail to observe how completely all the opinions he advanced regarding it, appear subverted by the interesting discoveries of M. Bernard. From the moment those discoveries were published, our views, of necessity, underwent a change, and however far we may be even now from a full and correct interpretation of the phenomena of saccharine diabetes, we still feel perfect confidence that we have made a step in advance.

It is not my intention to enter upon the etiology of diabetes mellitus further than to remind you that the views of M. Bernard, ably enunciated

by your Gulstonian lecturer, have shown that the liver, contributing, as it does, to the formation of sugar in the normal state of the organism, may be regarded, under certain diseased conditions, as the producer of the diabetic state. That in point of fact, according to Bernard, we have not now to determine how a substance, foreign to the healthy constitution of the blood, becomes engendered in the system, but merely to inquire into the causes producing, on the one hand, an over-activity in the sugar-forming action of the liver, or, on the other, the diminution of the destructive power apparently possessed by the blood in health over that sugar when it has mingled with the circulating fluid.

Now all this is clear enough, were the sugar secreted by the liver, and that produced by injuring the base of the fourth ventricle, identical with that existing in the urine of true diabetes. This, however, is not the case, and we are not, therefore, so nearly about to unravel the difficulty as we might at first be inclined to believe.

About two years ago I took the opportunity of obtaining blood from the hepatic veins of a dog, in order to determine the presence of sugar; for, like many others, I was at first a little incredulous. By the assistance of my friend, Mr. Hilton, this was effected without much difficulty.

On examining the blood obtained in this way, I found, it is true, that it yielded me sugar; but there was a peculiarity in the reaction of the tests, which led me to suspect I was not dealing with the same sugar as that contained in the urine of diabetes. It was quite impossible for me at the time to undertake a chemical investigation of the subject, and I was not sufficiently satisfied with my results to venture on publication. Some months ago I mentioned my suspicions to my friend, Dr. Pavy, who has thrown much light on this interesting subject, and he told me that the same doubt had occurred to him some time since, and he immediately showed me from his note-books that he had worked the question out very satisfactorily, though he had not published on the point. Having Dr. Pavy's permission to do so, I will now detail the results of his investigations. It appears that the principal point of difference between these sugars consists in the greater facility possessed by the hepatic sugar, and by the sugar of *artificial* diabetes, of undergoing destruction by contact with animal tissue. This has been shown by an experiment made on the sugar of *artificial* diabetes, comparing the result with that obtained by similarly treating grape sugar and *true* diabetic sugar. The experiments were conducted as follows:—Three vessels were taken. In the first, a quantity of pounded liver, obtained from a healthy dog, was placed with a solution of the urine of artificial diabetes; the specific gravity of the solution was 1045. In the second vessel was placed pounded liver with a solution of common grape sugar, of specific gravity 1040. In the third was placed pounded liver with a solution of extract of true diabetic urine, of specific gravity 1040. The pounded liver was

used (as any other animal matter might have been) merely to induce changes in the elements of these saccharine principles by its presence. The three mixtures were now set aside for nine days. At the end of that time, on submitting them to examination by Barreswill's solution, it was found that the artificial diabetic sugar had entirely disappeared, while the reactions were obtained in all their completeness from the two other solutions. Experiments made with the same solutions, substituting blood for pounded liver, led to the same results, showing a power of resisting decomposition on the part of grape sugar and *true* diabetic sugar, far exceeding that existing in sugar obtained by the production of diabetes artificially.

There seems little doubt that the sugar of diabetes is a higher quality of the principle, and that it can preserve its atomic arrangement with far greater force than the hepatic variety. A power, however, seems to reside in the blood, which after *some length of time* eventually destroys, not only hepatic sugar and that of diabetes artificially produced, but even that of true diabetes mellitus. Thus Dr. Pavy's experiments show that if the blood taken from a diabetic be allowed to coagulate, and the serum then be separated from the crassamentum, we can detect scarcely any evidence from the latter after a very long exposure. In the serum, however, it can be detected in quantity till decomposition is thoroughly set in. For some considerable time both crassamentum and serum give full evidence, however, which contrasts strongly with the reaction of blood taken fresh from the right ventricle in health, and which contains *hepatic* sugar, for here the sugar disappears almost immediately the separation into serum and clot is completed. It is almost certain that when we produce the artificial diabetic state by operation, we obtain in the urine the hepatic sugar of the liver. It is also proved that this sugar of *artificial* diabetes is not the same as the sugar of *true* diabetes.

Now, of course, were these sugars identical, we might consider true saccharine diabetes as a disease in which the sugar-forming property of the liver became abnormally active; or, on the other hand, a disease in which normal sugar was formed in the liver in usual quantity, but that the blood had lost the power of destroying it when so formed, and that it therefore appeared in the urine.

The results I have detailed place us, however, in a very different position. We know now that true diabetic sugar is destructible only with great difficulty, and that it is not the same as ordinary hepatic sugar. The question will then arise—Are we to regard the sugar of diabetic urine as a modification of that poured into the blood by the hepatic veins in health, or, on the other hand, as a product of disease bearing no relation whatever to the sugar of the liver?

To those who have studied the subject of sugar in its chemical relations, who are acquainted with its varieties and the facility with which these are convertible into each other by the most simple

processes, there will be no difficulty in believing that the sugar of diabetes may be easily derived from that produced in the liver in health. Late experimenters on the sugars obtained from the vegetable kingdom have shown how easily transmutations are thus effected, and chemical properties developed or abstracted by simple contact with materials apparently possessing anything but chemical activity. No one can fail to be struck, for instance, with the curious fact, that the sugar contained in fruits possesses a certain action on light, influencing polarization, which action is precisely reversed in the sugar obtained by *crystallization* from the very same source. Thus, the gummy kind of sugar obtained from grapes possesses the property of *left-handed* circular polarization; but if we allow this sugar to lie exposed, a kind of imperfect crystallization occurs throughout the mass; and if we collect the granular crystals so formed, we find we have in these a sugar differing materially from that originally extracted from the fruit. Its chemical constitution is not the same. Its constitution is $C_{12}H_{22}O_{11}$, instead of $C_{12}H_{22}O_{12}$; and when examined optically, it is found to possess the property of *right-handed* circular polarization. The change appears to be effected here by some constituent of the vegetable juice exercising its influence as crystallization goes on—probably the acids play an important part. Now, the liver, owing to same diseased action, may be supposed, in diabetes, to produce a sugar differing from that of health—a sugar which cannot be destroyed by the changes taking place naturally in the blood—changes rapidly affecting and destroying healthy hepatic sugar.

The phenomena of diabetes mellitus are, then, not quite so simple as the experiments and discoveries of Bernard would at a first view make them appear; and we have yet to determine the causes in action for the formation of this abnormal sugar. Does the presence of a different ferment interfere—even as we observe catalysis productive of varying results out of the body—may not an analogous action be going on in the liver? and, if so, what may be the nature of the ferment productive of disease, and whence is it derived? Are we to look to the portal blood for the ferment, or controlling influence which forms this less destructible sugar? And is it owing to this diseased state of blood that the liver, even though unaffected, is unable to cause the changes occurring in health?

But we need not have recourse to the theory of a ferment. The portal blood may present such principles to the liver as are only convertible into the *true diabetic sugar*. So far as we can yet determine, then, the whole phenomena of diabetic disease may eventually be traced to an abnormal state of the bile, gastric juice, and pancreatic secretion, any one or all of which may interfere with the formation of healthy products in the portal blood, and so overpower a healthy liver in the discharge of its office. Analogy would certainly, however, rather direct us to conclude that

in diabetes the function of the liver becomes altered under the influence of some cause as yet unknown. Bernard has proved that the organ in health has a very strong transformative action on grape sugar; and so powerful is this, that we should almost be entitled to conclude, even in the event of the portal blood bringing diabetic sugar, ready prepared, into the hepatic circulation, that it would be metamorphosed by the liver into normal *hepatic* sugar before it could reach the cava through the hepatic veins.

These results, then, taken together, render it probable that we are to look for the cause of diabetes mellitus in a disturbed state of the hepatic function, not in an increase of *natural* action, but in an action varying in *kind*. We see that in health the liver would reduce proximate animal principles to a normal hepatic sugar, and in the perversion of force occurring in diabetes mellitus, we have a product given us approaching in character, it is true, to the normal sugar, but by no means identical with it. There is great facility for theorizing with respect to the agencies in operation in effecting this change of action. As vegetable juices contain principles which, by simple contact, can alter the chemical and optical qualities of the sugar first generated in the fruit, how easy to believe that the elaborate fluids contained in the several parts of the circulatory system of the liver may do the same. We know that acids are active in the vegetable kingdom—we know that the liver-substance is acid—may not an over acid state cause the production of this abnormal sugar? or may not even a too slow circulation through the organ (by allowing too long contact with acid matter) bring about disease? These are questions requiring much consideration.

In reflecting on the phenomena of this important disease, we are naturally led to consider the anatomical relations of the organs most obviously concerned in its causation; and the stomach and liver must more especially present themselves to our notice. The position of these organs—situate as they are in the immediate vicinity of the central masses of the sympathetic, the semilunar ganglia, and the splanchnic nerves, and supplied also with branches having immediate connexion with the cerebro-spinal system,—is in itself suggestive of the high importance of the offices discharged by them, of their sympathies and close relation. In this part, then, of the living and moving organism, a most intimate union is effected between the sympathetic and cerebro-spinal systems—systems presenting a curious and doubtless intentionally-different arrangement as regards their chemical relations, and one which has been, as far as I can ascertain, entirely overlooked by physiologists; an arrangement having most certainly a deep meaning, and one which I fully believe is to throw light on many obscure problems in medical science. I allude to the distribution of the ultimate fibrillæ of the sympathetic and cerebro-spinal systems. Thus the ultimate extremities of the sympathetic are almost entirely spread over parts possessing an alkaline reaction,

while precisely the opposite is the case with the fibrillæ of the cerebro-spinal system. The former lie in mucous and serous surfaces, and in the bloodvessels bathed with alkaline fluid; the latter lie in muscular fibre and in the cutis as cutaneous nerves, and in both cases are bathed in strongly acid secretion. Now there is no part of the organism to which we can point in which these chemical opposites are so freely interwoven as in the neighbourhood of the liver and stomach; and here again we are attracted by the peculiar nature of the secretions poured out by these organs. They seem to be exceptions to the general rule—to be the parts, as it were, acted upon by the electro-chemical arrangement, and parts to which it is subservient.

My object in taking this notice of the nervous relations of the stomach and liver is merely preliminary to making a suggestion to my fellow-labourers in this important field, to look carefully to the state of what I shall presume to call the great nervous centre of the sympathetic in diabetic cases, whenever opportunity may occur. In this terrible malady, we may perhaps there find the origin of evil in some diseased condition, giving rise, not to the increased activity of glycogenesis, but to a diseased state of the hepatic function, productive of the sugar we find in true diabetes,—a sugar difficultly destructible, and therefore not hepatic sugar, nor the sugar produced in the urine by puncture of the base of the fourth ventricle.

A Clinical Lecture

ON

CALOMEL-FUMIGATION IN SYPHILIS.

Delivered at King's College Hospital,

By HENRY LEE, Esq., F.R.C.S.,

SURGEON TO KING'S COLLEGE AND TO THE LOCK HOSPITALS.

GENTLEMEN,—There is now in the Fisk ward, a case being treated by calomel fumigation, and amongst the out-patients there are many other cases of milder character being treated in the same way. As this subject is one of much practical interest, and as it offers several novel points in its mode of application, I have selected it for consideration to-day.

The case to which I have alluded, is that of J. L—, aged 25, who is reduced to a state of extreme debility, apparently in consequence of syphilitic disease, which he contracted eighteen months ago. The primary affection in this patient healed in four weeks; subsequently to this, a bubo formed in the groin, and remained open eleven months. His throat became sore seven months after his first disease, and has remained ulcerated to the present time. When admitted, this patient was greatly reduced. He suffered from a kind of low fever, accompanied by periodical perspirations, and considerable expectoration. Several painful nodes were in addition developing themselves upon his forehead and cheek.

This patient was in such a state of debility that no one, I suppose, would have thought of giving him mercury internally. After his admission, he was treated by bark and cod-liver oil, by opium and nitric acid, and by other medicines. The means used have, however, left him in as weak and unpromising a condition as before. Now, although this patient proved quite unable to bear mercury in any of its ordinary forms, yet it was thought that it might agree with him in the shape of vapour applied to the skin; and that if he could bear it in this form he might, by that means, be cured of his intractable disease. Accordingly, on the 17th of December, he was ordered to fumigate the surface of his body with ten grains of calomel every night before going to bed.*

From the result of other cases treated in this way, I am induced to hope that this patient's symptoms, as far as they have a syphilitic origin, may be relieved. Many of you may recollect an equally bad case—namely, that of a woman who lay for months in St. Clement's ward, unable to move, I will not say out of bed, but even in bed. The surface of her body was covered with numerous extremely painful syphilitic ulcerations; and she suffered from a similar affection of the throat. Now, in this case, again, all the usual remedies were tried, and without effect. She was at length sent for change of air to another hospital. The change certainly did her good for a time; the ulcerations showed a disposition to heal, and she gained some strength. She soon, however, relapsed; the ulcerations again spread, and she fell into much the same condition as before. She now began the calomel fumigations, according to the plan presently to be described, and the benefit was marked; she soon became so well that she could with difficulty be restrained within due bounds, and ultimately the governors discharged her for misconduct before she was quite well. I might mention to you several cases where patients have been reduced to a very low condition, and where they have had the best advice, both in London and Paris, and where they have remained for months uncured, under the idea that they were unable to support the action of mercury, and where a judicious use of calomel fumigation continued over a space of several weeks, has been followed by a disappearance of the syphilitic symptoms. I do not, however, purpose now to enter into further details of any of these cases, but to make some general observations upon the kind of syphilitic disease to which mercurial treatment is applicable, and the different forms in which it may be administered. There is at present so much difference of opinion upon these points, and the practice of many persons appears to be so little guided by any fixed principles, that any plain and distinct rules upon these points could not, I believe, be unacceptable to those who may be about to engage in practice for themselves.

* This patient subsequently completely recovered in the Lock Hospital, under the use of calomel fumigation combined with sarsaparilla.

When syphilitic matter is applied to the skin or mucous membrane, if inoculation occur, a certain amount of inflammation will follow. The character of this inflammation will vary according to circumstances, and upon it will depend the results which may subsequently be expected. The action in the inoculated part may terminate in mortification. The death of the part generally involves the destruction of the poison; they together cease to exist, and when the slough separates, an ordinary sore alone remains, requiring no specific treatment. The death of the poisoned part occurs sometimes more slowly; a molecular necrosis occurs. The infected tissue perishes bit by bit, but before one part perishes it affects another; and as each part dies without taking on that peculiar action by means of which the syphilitic poison enters the constitution, the result, so far as the system is concerned, is the same as if death of the infected part had occurred at once.

Instead of terminating in mortification, or phagedæna, the inflammation may end in suppuration. In this action each pus globule is developed from being a part of the living system into an independent cell, unconnected with the organism from which it originated. In this deciduous cell-growth morbid matters are thrown off from the living body, and the observation of a large number of cases enables me to say that this occurs with regard to the syphilitic poison. The specific inflammation which is characterized by the formation of pus, or the suppurative inflammation, is not that by which the syphilitic poison gains admission to the human system.

I have now notes of upwards of seventy cases, none of them of later date than October last, in which the secretion from the primary sores was determined by microscopic examination to be purulent, and in none of these, to my knowledge, has any secondary disease followed. I therefore conclude that a suppurating syphilitic sore is a local disease, and may be treated by local remedies.

This action may be so modified that, instead of the poison being thrown off from the surface of the affected part by suppuration, a part of it may find its way along the absorbent vessels, and its presence may be recognised at any point of its passage by its power of there producing a fresh inoculation. The secretion from the original sore will often consist of particles of various sizes, and the surface of the sore will often appear broken up with a ragged irregular outline. The poison which is carried along the absorbent vessels, is arrested at the first absorbent gland which it reaches. The absorbents appear to take up alike the poison and the elements of the tissue in which it is contained, but the glands connected with the absorbent system have the power of recognising, as it were, and of arresting the poison. An indiscriminate absorption by vessels is here rectified by a discriminative activity of the absorbent glands, and the result is, that the syphilitic poison, although it frequently reaches one set of absorbent glands, seldom or never passes on to

affect another set, and consequently seldom or never by this means finds an entrance into the patient's system. This morbid process, then, which for want of a better name we call "ulcerative inflammation," is again a local disease, and does not necessarily require any mercurial treatment. The occurrence of inflammatory or suppurating bubo in no way prevents the patient's system from being infected with syphilis; but in that case, upon inquiry, the affection which produces the secondary disease will be found not to be that which produces the suppuration of the gland. These forms of disease may co-exist, but do not, except from some exceptional cause, result from the same infection.

In the three classes of local syphilitic disease which I have now very briefly described, I do not mean to say that constitutional treatment may not be necessary. In particular cases it may be advisable to have recourse to mercurial remedies, so as to affect the patient's system, but I do say that, as a rule, mercury in these three classes of cases is not required for the purpose of preventing secondary symptoms.

The morbid process by which the syphilitic poison enters the human constitution consists in a circumscribed, persistent, indolent action, partaking of the nature of the adhesive inflammation. This affection usually commences as a crack, an abrasion, or a pimple. It is accompanied by little pain, redness, or swelling, unless artificially irritated. The secretion from its surface is small in quantity, consisting often of broken-up epithelial scales; sometimes of globules having various forms, and being often opaque. Occasionally, these globules, especially when derived from a mucous surface, resemble pus-cells; they may, however, be distinguished by the addition of a little acetic acid, and subsequent microscopic examination. If the secretion from any doubtful sore be treated in this manner, if purulent, the situation of each pus-globule will contain within its circumference, one, two, or three little nuclei; if not purulent, such an appearance will not be observed. The sores which I am now describing, never, I believe, except from accidental causes, secrete pus. The nature of the accompanying inflammation is essentially of the adhesive kind, and consequently the base and edges of the sores will generally (although not always) become infiltrated with lymph, which is deposited in a very peculiar way. It will ordinarily be so arranged as to form a layer of equal thickness, surrounding the sore on every side, and the induration which it causes will generally terminate quite abruptly, so as to give to the fingers the sensation as if a piece of thin cartilage had been let into the healthy tissues. The absorbent glands in such a case will be generally enlarged, but not inflamed; they may be felt to roll freely and without pain under the finger, and the skin covering them will be quite unaffected. These glands do not suppurate except from accidental causes, in no way necessarily associated with the disease. When a circumscribed, persistent spot of adhesive inflamma-

tion, such as those now described, appears on a suspicious part, and remains without evident cause in an indolent condition, changing little from day to day, there is the greatest danger that the patient will be affected with constitutional syphilis. These are called infecting sores—infecting as regards the patient's constitution, though not more infecting than other kinds of syphilitic sores, as regards their liability to be communicated by inoculation.

Now as the first three classes of cases—namely, those in which the inflammation terminates respectively in sloughing, in suppuration, or in ulceration—may, as a rule, be treated by local means, so the last, or that in which the accompanying inflammation is of the adhesive character, requires constitutional treatment if we would prevent our patients from having secondary symptoms. A great variety of plans have been at various times recommended for preventing the occurrence of these secondary symptoms, and for curing them when they have appeared. Some surgeons have written works in order to prove that syphilis might be cured by sarsaparilla; others have advocated opium equally strongly. Again, while some have advised the use of ammonia, others have recommended the nitro-muriatic acid. In like manner, guaiacum, China root, mezereon, bark, hemlock, sassafras, juniper, saponaria, dulcamara, the green husk of the walnut, and many other vegetable and mineral products have enjoyed a temporary reputation for the prevention or the cure of syphilis. Of late years the iodide of potassium has been in great repute, and in certain secondary forms of the disease has proved a most valuable remedy. But with regard to primary syphilis you will now be prepared to ask what kind of affections were treated by the different medicines above-mentioned? Were their virtues tried in cases of infecting, or of non-infecting primary sores? If no discrimination has been made in this respect, it may be inferred that a large proportion of the cases treated consisted of non-infecting sores, and under these circumstances it is no wonder, in due course of time, that the primary affections healed, and were not, in a considerable proportion of cases, followed by secondary symptoms. But let a given number of cases, bearing the diagnostic marks of infecting sores above-mentioned, be treated by any of these remedies, and I will venture to affirm that the result will be most unsatisfactory. In fact, we find that all the remedies which I have mentioned, with the exception of the iodide of potassium, after having had a temporary reputation, have fallen into comparative disuse. Mercury alone, through good and evil report, in spite of the strong prejudices of some against its use, and the no less adverse influence of others, who have used it to an unjustifiable extent, has maintained its general reputation. From within a short time of the recognition of syphilis as a specific disease, to the present, mercury has been extensively employed in its treatment, and during the whole of that time, the majority of surgeons have regarded it as the most efficacious of all known remedies. It

must be admitted that mercury has often been injudiciously given, and that it has consequently done much harm. It has, nevertheless, maintained its reputation, and it may be safely affirmed, that general experience has proved that there is no remedy which has the same power to extinguish the venereal disease as mercury. The iodide of potassium of which I have before spoken, possesses in an eminent degree the power of removing certain forms of secondary symptoms; but according to my experience, it does not permanently cure the disease in the same way that mercury does.

There are different ways of administering mercury. It may be given internally in pills; it may be used in the form of ointment; or it may be used in the form of vapour applied to the skin.

It is not necessary for me at present to enumerate the various preparations of mercury that have been administered internally. They have in common this disadvantage in the treatment of syphilis, that they disturb and irritate the digestive organs, and can seldom be continued sufficiently long satisfactorily to cure the disease.

Mercurial inunction is a very efficient way of using mercury; but it is dirty, laborious, and often little suited to the tastes of those who require its use. It is, however, much less liable to gripe and purge than when the mercury is given internally; and it does not weaken the patient's constitution near so much.

There are two principal objects in view in treating a case of syphilis: the first, to remove the symptoms; the second, to cure the disease. Now, a short course of mercury will often effect the former of these objects, as will also, in secondary cases, the administration of the iodide of potassium; but neither the short course of mercury, nor the iodide of potassium, will in general cure syphilis. The symptoms will, it is true, be removed, but they will return; and, practically, it is found extremely difficult to induce patients, in the upper classes of society, to continue a course of mercurial inunction sufficiently long to prevent the occurrence, or the return of secondary symptoms.

Of all the modes of treatment by mercury, none, according to my experience, removes the symptoms so readily as fumigation; none is attended with so little mischief to the patient's constitution; and after none is a relapse so seldom experienced.

The plan itself is not new. It was used in Europe soon after the recognition of the venereal disease at the end of the fifteenth century; and it was subsequently very extensively practised in India and elsewhere. The cumbrous nature of the apparatus and the want of precise knowledge of the nature of the substances employed, has, even up to the present time, prevented this mode of treatment from coming into general use. Recently, however, the plan of using mercurial fumigation has been much improved. We are indebted to Mr. Langston Parker for having much simplified the apparatus which, at various intervals, was used by Lalouette, Pearson, Abernethy, and others. Mr. Parker recommends that from one

to three drachms of the bisulphuret of mercury, or the same quantity of the grey oxide, or of the binocide, should be used upon each occasion. Now, practically I have found some serious objections to these preparations. The bisulphuret of mercury when exposed to heat, gives off some vapour, probably sulphurous acid gas, which causes much irritation when inhaled; and I have reason to believe, that the symptoms produced by this preparation have been amongst the reasons why mercurial fumigation has not been more extensively practised. The grey oxide again, is found to be of uncertain composition, and as obtained at the shops it will often not volatilize at the temperature produced by an ordinary spirit lamp. When it does volatilize, it is decomposed. It is first converted partially, or entirely, into the deutoxide of mercury, and if the temperature be increased, the oxygen is driven off, and finally the metallic mercury is sublimed. The uncertainty of the composition of this preparation, both before and after it is exposed to heat, naturally implies that its effects will be uncertain; and such, in practice, they have been found to be. Sometimes very little mercurial action has been produced; and, occasionally, the action has been excessive.

The preparation which I have, for the last eighteen months, constantly used is calomel. It possesses the advantage of being easily sublimed at a temperature which may be commanded in any private house. It is not decomposed either by heat or vapour water, and a comparatively very small quantity is sufficient to produce all the effect that is required. Since this plan has been introduced, different simple forms of apparatus have been devised for the purpose of volatilizing the calomel, and of effectually retaining it in contact with the skin during the requisite period for absorption to take place. Mr. Matthews, of Portugal street, has constructed two little lamps which answer the purpose very well. Over one lamp from ten to twenty grains of calomel is placed on a tin plate; and over the other there is a little water. The calomel and the water then volatilize together; and I have found practically that the mercurial action is more certainly produced, and more steadily maintained, when mixed with a certain quantity of vapour of water than when the calomel is used alone.

The best apparatus for calomel fumigation hitherto made is, I believe, that of Messrs. Savigny and Co., of St. James's street. This has been completed after many trials undertaken at the suggestion of Mr. Pollock of St. George's Hospital. It consists of a kind of tin case, containing a spirit-lamp. In the centre immediately over the wick of the lamp, is a small circular tin plate, upon which the ten or twenty grains of calomel are placed. Around this is a circular depression, which is half filled with boiling water. The patient places this on the ground, and sits over it, or near it, on a small cane stool. He is then enveloped, lamp and all, in a circular Mackintosh, which Messrs. Savigny have made for the purpose. When a Mackintosh cannot readily be procured, a

double blanket answers the purpose very well. At the expiration of a quarter of an hour or twenty minutes, the calomel, the water, and the spirit in the lamp, will have disappeared, and the patient may then get into bed. It is well that a certain portion of the vapour should be inhaled during the bath. This will render the mercurial action more evident upon the patient's gums; but this is not always necessary for the cure of the disease. The length of time that the use of the baths should be continued, is probably about the same as would be required in other forms of mercurial treatment.

During the last eighteen months, I have employed this plan of treatment very extensively at the Lock Hospital, and there we seldom fail to get patients' gums slightly affected in three or four days. The mercurial action may be regulated with the greatest nicety, either by the length of time the patient is exposed to the vapour of calomel or by the quantity inhaled, or by the quantity used upon each occasion. It is never requisite to produce salivation, and in the form now recommended an excessive mercurial action can scarcely be accidentally induced. The patients' constitutions are found, at the end of the mercurial course, to be in general as strong, and often much stronger than when they commenced.

The conclusions which I would draw from the foregoing observations are, that in primary syphilis a large proportion of cases will not require any mercurial treatment at all; and that those which do may with tolerable certainty be distinguished from those which do not; that in those cases of primary syphilis which, if left to themselves, will infect the patient's system, mercurial treatment alone can be relied upon for preventing secondary symptoms; that in cases of secondary affections, although other medicines may remove the symptoms, mercury is much more effective than any other remedy in curing the disease so that the symptoms will not recur; and that of all the modes of administering mercury, mercurial fumigation is that which is attended with the least demand upon the powers of the patient's constitution; it is that which is regulated with the greatest facility, and that which can be maintained without inconvenience for the longest period; and I may add that I believe it to be less frequently followed by a recurrence of the secondary symptoms than any other mode of treatment whatever.

Original Papers.

OBSERVATIONS UPON THE NATURE AND TREATMENT OF BOIL AND CARBUNCLE.

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PART I.

INTRODUCTION.

THE progress of scientific surgery since the

death of John Hunter has been but a continued illustration of the great truths he first propounded. Mr. Abernethy made considerable advances in the direction pointed out by his illustrious predecessor, but the most profound and comprehensive exposition of those facts which collectively belong to the department of constitutional pathology has proceeded from the pen of one who still survives. The treatise on "Constitutional Irritation" has secured for its author that kind of reputation which extends far beyond the limits of a kingdom, and it is accorded to him wherever surgery is professed as a science, or its importance as the least exclusive department of medicine is honestly recognised and upheld.

The local treatment of disease is at all times a work of great nicety, but the labour is lightened and expedited by a just appreciation of its remote causes; and he whose mind is occupied by a frequent contemplation of that method which implies an early concentration of the powers of life, so as to arrest local disorder at the smallest cost to the health of his patient, certainly selects the safest ground whereon to combat diseased actions, whether chronic or acute.

The following remarks, upon the substitution of a brief and effectual remedy for the employment of the knife in the local management of a most painful, and at times a very dangerous, complaint, are offered in the sense here suggested. My purpose is to exhibit a new illustration of the great utility and importance of watching the course of the natural surgeon, and aiding him more effectually than heretofore, in circumstances of great urgency, by a closer imitation of the original design of that artist than is implied by the coarse and abrupt interference with a highly critical process, such as the deep crucial incision of a ripe carbuncle. I find, on referring to the very little which has been said by systematic authors upon this subject, that the common opinion concerning the origin of a boil or furuncle is, that it commences in the skin follicles, being an inflammation which extends into the cellular substance, and terminates in a defined slough of that tissue. The dead material being eliminated, cicatrization easily ensues. This action having been noticed to be of easy recurrence in the young and robust has given rise to the vulgar notion that it is a sign of redundant health and strength. It is simply a result of sympathy with some occult disorder or irritation of the mucous membrane of the stomach or intestine, such as is provoked under other forms of disturbance in that organ. The origin and course of a boil is that of a carbuncle upon a smaller scale; it is a specific inflammation, marked by a deposit of fibrine or adhesive matter, the common antecedent of a slough, be it no larger than a bean or split-pea. Some are very prone to boils from their infancy. These are commonly florid and fleshy as children, with large appetites; they have a large visceral development, but the heart at times gives proof of a feeble action, not in keeping with the other external signs of vigour. The pulmonic circulation

is easily affected by weather or over-exertion, as evidenced by a tendency to cough on very slight pretexts; and the disposition to complain of chilliness or cold feet is indicative of a want of tone in the skin capillaries. Whenever, under such circumstances, the appetite flags, and the secretions are unhealthy, the surface is very liable to exhibit symptoms of furuncular irritation. Probably a very slight accident determines the place of the boil, or it may be that the dense granular structure of the scalp and posterior cervical region in some, and the looser parts in others, have a quicker disposition to undergo that primary stasis wherein the complaint commences. In all the true or final cause of the local action is the dis-tempered quality of the circulating blood.

Childhood is never invaded by carbuncles. The white tissues are not fully developed at that age, and are, comparatively speaking, very vascular. In old age, we know that tendons and aponeuroses die very easily. The rapid decay of this material, and its numerous deeply-seated connexions, render the local management of a carbuncle truly formidable. The separation of the sloughs discovers enormous chasms, and the powers of endurance and reproduction are indeed heavily taxed to restore the sufferer in circumstances of such urgency. I have remarked on two occasions where I knew the strumous taint to be very decided, that boils recurred frequently, leaving indolent sores behind them, which healed slowly or imperfectly. In these cases, change of air and steel medicines, also the salts containing iodine, as the syrup of the iodide of iron and the hydriodate of potass, will be found useful. I have now seen a good many carbuncles, but I do not remember ever to have seen a scrofulous person so attacked. Boils, on the contrary, are common enough in individuals whose aspect bespeaks that temperament. The sexes are not by any means equally disposed to these actions: women, it is well known, do not suffer like men from carbuncles. The case of acute anthrax occurring in the female is altogether rare and exceptional. The reason of this difference is obvious. It does not depend upon organization, but upon the very opposite mode of being observed by the sexes in a state of civilization. Amongst men, the enfeebled frame of age and the habitual valetudinarian are quite as liable to an attack of acute carbuncle as the over-fed voluptuary or the nervous invalid. In all these instances, vitiated secretions materially influence the period and nature of the illness. Carbuncle is certainly of rare occurrence in early adult life—under thirty. I have treated in succession two gentlemen between thirty and forty-five for bad carbuncle. One of these cases underwent the further complication of acute gout.

I recognise two forms or modes of action in carbuncular disease. The first is vigorous and acute, marked by pain, often agonizing in its character. Here there is an early tendency to accumulation, a term which I adopt as it is contrasted with the *pointing* of an abscess. The surrounding induration is of rapid production, extending,

ordinarily, beyond the tegumentary discoloration; but having reached a certain limit, it shows no further disposition to spread or take on a renewed action. These are cases which are further marked by febrile reaction, a loaded tongue, great restlessness, and the like. They are the result of intemperance and bad secretions, in a full habit. They are the direct consequence of exposure to cold or some such powerfully exciting cause, and stand in marked contrast with a second form of the disorder, which may be termed the chronic kind. This belongs to the wasted habit of age, or the exhaustion incident to organic changes elsewhere; also the depressed condition of body which belongs to anxiety and nervous depression. On these occasions, the deposit is larger and more slowly progressive; the skin suffers to a great extent. There is more hardness and discoloration, but less tension, in the early stage of the complaint. The pain is dull and continued, but not so intense, and more easily controlled by opium. In the first case it is commonly safe and right to purge the patient freely. In the second, less is required in this particular, and laxatives must be used with caution. In either case, the caustic, if its application is properly timed, is attended with the best possible effect. Its use gives more pain, and afterwards seems to exert a more sudden and complete control over the spread of the disease in acute carbuncle. Its effect is slower in the chronic form of the action; it is less complained of, and the sloughs separate more gradually; but when once that stage of the action has been established, the progressive induration is arrested, the tumour becomes flatter and softer, the skin recovers in a marked manner, and any further structural change in this tissue is suspended, beyond those parts which from the first were clearly defined and marked out as being the points of issue for the subjacent sloughs. The dangerous form of the disorder is of the latter or chronic kind, which is subject to ulterior complications, such as gout and remote visceral lesions, typical of an organic and permanent degeneration.

The occurrence of what is called a core in boil or carbuncle—a deep-seated plug of dead lymph, interspersed with shreds of cellular and membranous texture—seems to have induced a belief that this product represents all the event or effect of the local inflammation, and that there is little or no compromise of tissue beside or beyond it. This is a doctrine to which I cannot subscribe. The violence of the inflammation certainly kills the tissue which it attacks. This core or bed of waste lymph belonged originally to the deposit which bounded and defined the limits of the sloughing process; but in carbuncle it forms but a small part of the decayed and spoiled substance, which escapes so abundantly after the use of the caustic in the second stage of the disorder.

When we consider that in the case of a boil there is always a slough, be it no bigger than a nail-head, we must conclude that the malady is not confined to the part. The surface of a limb may be beaten to discoloration, a bone is broken

to comminution, nay, the body will suffer the worst forms of contusion, and yet mortification is no certain consequence of the mischief. The nervous depression, the indigestion, the affusion of cold air, damp weather, or what ever may be said to have provoked the illness associated with an anthrax or an eruption of boils, does not cause the local change. That depends upon an impure or chemically altered blood, upon which a mere pus formation cannot operate in the sense of crisis or relief. In these circumstances of an enforced necessity for a sudden decay of tissue, that is most likely to be first affected which dies soonest, and whose place in the economy is most easily supplied, ordinarily by a direct reproduction.

PART II.

OF INCISION.

It is probable that this has been the rule of practice hitherto, both at home and abroad, although, from time to time, some must have had their misgivings, in the face of several accidents, which commonly follow an unsparing use of the knife. In the middle of the last century, Pouteau published a case in which the side of the face was burned deeply with a hot iron for the purpose of discharging a collection of his kind. The patient, a woman, recovered perfectly. It is not to be wondered at that so formidable a remedy never became the fashion. Dionis declares that there is nothing for it but cutting deeply, with the air of a person who would have preferred a milder method. English surgeons appear uniformly to have recommended this mode of operating, which, it must be confessed, is still the prevailing fashion, in spite of profuse hæmorrhage, a wound which at best heals slowly, and a ghastly scar. I am not willing to assert dogmatically that it is always inexpedient to employ the knife, but the occasion will present itself but rarely to any one who has once witnessed the effects of a strong caustic in procuring all that is obtained by cutting, upon far easier and safer terms. It may happen in a carbuncular inflammation that the first stage, or that of tension, is much prolonged and very painful, without much discoloration of the skin. Here great present relief may sometimes be obtained by passing a straight knife through the skin and superior part of the swelling. In the young plethoric habit I have known this done with impunity, nay with advantage; and whether the opening so made be rectilinear or crucial, it is a practice strictly consistent with the use of the caustic potash at a later time, which may be applied to the wound with good success on the second or third day, or whenever the slough is visibly progressive and on the increase in the part. A plaster may occasionally be applied before the occurrence of ichor and pinhole opening. After all, there is no novelty in this suggestion; it is a common method of treating boils amongst the vulgar, before they have arrived at maturity. The notion which I am especially desirous of seeing exploded is, that deep cutting can under any cir-

cumstances become either requisite or safe. An incision to include the base of the swelling must in carbuncles be very extensive. It is not denied that it is impossible to calculate the amount of blood which may be lost in cutting a large anthrax upon the nape of the neck. Many old people have never rallied after such an operation. They do not die immediately, but the local process of dissolution thus acquires an impetus which they are wholly unable to resist. The work of elimination proceeds slowly or remains wholly suspended, and the appetite fails; full opiates cease to produce refreshing sleep; the patient becomes drowsy and more feeble; the temperature of the body is not maintained equably; the pulse is subject to intermission or begins to jerk; hiccough supervenes; respiration is performed with difficulty; and sooner or later the patient dies, retaining his intellectual faculties to the last. Such a sudden and irreparable declension of the powers of the system is due solely to excessive hæmorrhage. It is neither affirmed nor pretended that many have not survived the use of the knife, even in advanced life; but such recovery is endangered by the loss of blood to an extent which is without excuse, inasmuch as it is wholly unnecessary. Another bad consequence of deep or early cutting is, the slower separation of the sloughs and the little control which it exerts over a spreading induration. A patient so treated is not uncommonly obliged to submit to repeated dilatations, he being now in a state of prostration which profoundly aggravates his former sufferings and present danger.

There is nothing of which Nature is more impatient than any interruption to the course and final purpose of the adhesive process. Frequent cutting interferes with that barrier, production of lymph, which waits upon all local inflammation not terminating in a present resolution. Hence suppuration and sinus; and having retrograded to that extent, it may be said that the work of repair must commence afresh.

Lastly, the period of cicatrization is materially influenced by the use of the knife. I have seen the entire cheek seamed as it would be by a deep sabre cut, and the patient frightfully and permanently disfigured by his inability to close the eyelids, after repeated incision of the cheek *secundum artem*. I subsequently applied the potassa to the same side of this gentleman's face. The result was a large eschar in front of the angle of the jaw. After the lapse of two years scarcely a trace remains of the site of a dense slough of the size of a sixpenny-piece. It may be confidently asserted, that the risk of deformity is very slight after the use of a quick caustic. It provides for the formation of a sore far more disposed to early contraction, and a smooth cicatrix, than the irritable margin of a deep incision.

PART III.

ON THE USE OF THE POTASSA FUSA.

In certain cases of cancer, and other anomalous

sores, it is probable that our faith in the local efficacy of strong caustics is undergoing a revival. The operation of the pure kali in changing the face of a smooth and excavated ulcer, discharging a thin ichor, into a healing surface, is very marked.

I have known such an action to be arrested by this means, where there appeared to be no alternative to the performance of a complete excision of the part. I am now about to exhibit the decided advantage to be thus obtained in the treatment of boil and carbuncle. By the use of the pure kali, a large anthrax may be destroyed and eliminated with a rapidity and an absence of suffering wholly without precedent in cases where recourse has been had to the scalpel.

In the language of Dr. Physick,* "there are three stages in this disorder. The first is premonitory. In the second, the skin has become dusky, and is perforated by pin-hole orifices, whence there is an ichorous oozing," &c. At this time our interference is an urgent necessity. The effect of a caustic is now most marked, and a succession of very severe cases during the past three years has convinced me of the truth of this statement. The formation of a large eschar being a close imitation of Nature's method of opening the skin, and which she desires to effect without loss of blood, cannot be wrong, and, indeed, experience proves that it is a safe and judicious proceeding. The pure potassa having a bluish tint when first cast, which it derives from the iron mould into which it is run, is probably the most valuable caustic which we possess for general purposes. It is quite manageable with a little care; it does its work rapidly, if only pure and dry. It kills outright all moist animal substances with which it comes into contact. It gives a good deal of pain sometimes for the first ten minutes after its application, and sometimes the patient makes little or no complaint. If there is nothing more than uneasiness after the operation, it is a sign either that the preparation has lost its virtue, being converted into a carbonate by prolonged exposure to the vapour of the atmosphere, or it may have been inefficiently applied, or at a wrong time, and before there is any sufficient indication of the points at which the skin will first give way. Lastly, the powers of life may be so sunk that the insensibility of a protracted exhaustion is made manifest by an entire exemption from all suffering of an acute or prolonged character.

The caustic-stick may be inserted into a goose-quill by way of handle, in which state it should be preserved in a closely stoppered phial, or it may, when wanted, be simply picked up with a pair of forceps. The operator then twists some stout paper about one end of the material, and it is ready for use. In the case of a moist or discharging surface, there is no occasion to employ any water. The solution of the caustic is sufficiently provided for by the condition of the parts concerned. When first I used this material in

* Vide Philadelphia Journal of Medical and Surgical Science vol. II.

the treatment of boils and carbuncles, I found that the fluid slough sometimes overran the margin of the wound or eschar, and a serious excoriation followed wherever this stream had passed along the cuticle. To avoid this, a dossil of dry flocky lint should be applied upon and around the new opening, and this may be allowed to remain there for some hours with advantage. It is absorbent, and defends the wound from extraneous irritation of all kinds. When a frothy, yeast-like action is seen to commence, and the parts become very dark, it is right to desist; in other words, the effect has been produced. The patient is now directed to preserve the attitude of repose, or, at all events, to remain quietly in his chamber. If the pain be prolonged, or the subject weakly, cordials, or even a full opiate, may be given with advantage. The application having done its work, and the chemical action having ceased, the pain soon subsides, unless the anthrax be unusually deep and extensive. In this particular I can, from numerous observations, fully confirm the experience of Dr. Physick; in short, this and the early separation of the sloughs, constitute two of the strongest arguments for substituting the use of the caustic kali for the knife. Some after-pain there always will be, and that, for a few minutes may be severe. The patient might express a wish to inhale an anæsthetic. I am not sure that this practice would be always unattended with risk in very large carbuncles occurring in old people, when situated upon the nape of the neck, or in the occipital region; but, in numberless other instances, I am not aware of any reason why an anæsthetic should be withheld, though few probably would deem it worth while to wait for such aid, were the operator not so provided at the moment. It is unnecessary here to say more of the third stage—wherein the sloughs are cast off and granulations make their appearance—than that these processes have acquired a progressive activity in the course of a week. A large granulating chasm upon the nape, in which I could easily place the back of my four fingers, has been more than once established after using the potassa, in the course of one week from the time of applying it, where, after using the knife, no similar condition has been achieved at the end of three or four. Of course there is uneasiness, and the appetite must be coaxed, and sleep secured by a full opiate every night if necessary. The carrot-poultice is the best that can be employed with a view to early cleaning and incarning the sore. I may here also take occasion to recommend the yellow basilicon ointment, also a solution of the chlorinated soda, as being very good applications to this class of sore at particular stages or periods of the healing process. Of the constitutional treatment of boils and carbuncles, I shall have more to say in another place. In some bad cases, I have obtained a good result—nay, I have twice been singularly successful in the use of the caustic, where the parties had previously submitted to the old rule of practice—viz. incisions, with the worst possible consequences; but it is expedient

for me to state, in conclusion, that matters are only aggravated by applying a feeble irritant like the nitrate of silver instead of a quick consuming substance, such as the pure kali, however well-timed or advisable the operation may be in other particulars. Some years ago, before I was conversant with the nature and advantage of the plan of treatment advocated in this paper, a gentleman showed me what is called an angry boil on the side of his neck. The skin was very red and hard in its neighbourhood, and its apex was prominent, being occupied by a large bead of pus. I ruptured the pustule, and then applied the nitrate of silver to the collection with considerable freedom.

In the course of twelve hours, violent pain ensued, the surrounding skin became tense and red, indeed, almost livid, with greatly increased swelling of the surrounding tegument: in short, the tumour had now acquired the dimensions of a carbuncle. In deference to a second opinion, this tumour was deeply incised, and many weeks elapsed before the patient was finally restored. Much blood was lost by the second operation, an accident which, if it did not endanger the patient's life, at all events very much retarded the approach of convalescence.

Postscript.—The impression that the use of the caustic potass is a far safer and more scientific mode of procedure in the treatment of large and devastating carbuncle than the ordinary plan of treatment by incision, will speedily pass into strong conviction with such as are willing to be guided by the patent evidence of fact rather than the blind guidance of hearsay teaching, or the poor rules of custom and connivance. The rapidity with which enormous sloughs are cast off; the elasticity shown even in old and broken habits, at a time when the constitutional powers commonly give way irretrievably under the older method; the activity of the granulating and contracting period, are so marked, and have received such repeated confirmation within the limited range of my own personal observation, that I cannot but reiterate, as a matter of certainty, that the artificial destruction of so much skin and subjacent tissue as must, under any circumstances, die and be got rid of by the sloughing process, should always be provided for by this method, which is so close an imitation of the work of the natural surgeon.

One apology for incision I am wholly at a loss to appreciate, as I cannot understand it. It is stated that early cutting saves the structure of the common integument. The discoloured, boggy, ulcerated skin tissue must always die to a limited extent. If it be incised, it encounters no fresh provocative to early separation: its de-vitalization is already so complete, that all idea of sudden relief, such as might be entertained in the face of a simple congestion, must be abandoned. The use of a cutting instrument exerts no influence for good, either present or prospective, in parts so circumstanced. Incision is but a super-added irritation, which commonly induces further

induration, and at a later time obstinate sinus and renewed sloughing. Thus much for the varied local results of these two very opposite remedies. The present risk of hæmorrhage, and a sudden diminution of all the vital powers, constitute, after all, the prime objection to the scalpel, as it enforces the necessity for having recourse to a far more lenient and philosophical method, so happily suggested by the existence of a remedy, which on such occasions I do not hesitate to term invaluable.

PART IV.

REMARKS ON THE CONSTITUTIONAL TREATMENT OF THESE DISORDERS.

GREAT difference of opinion exists as to the management of the system during the course of a carbuncle. Some recommend restriction even to abstinence, whilst others insist upon an active and enduring plan of support. The common direction which sanctions an indiscriminate use of meat and stimulating liquors is certainly not a wise one, but there is no doubt that the diet should be as generous as the patient's stomach can conveniently bear at the time.

In the early stage of these disorders there is usually great febrile disturbance; the tongue is coated, the bowels torpid or irregular, and the urine highly coloured, yielding an abundant lateritious deposit. The latter symptom is sometimes indicative of gout, and where this is the case, the complaint of pain in the part is very great indeed during the progress of a carbuncle, and a constant regard must be had even to the suspicion that such an action is lurking in the habit in reference to the plan of diet to be observed by the patient. The secretions of course will require regulation, but great care should be taken not to lower the patient unduly by frequent or drastic purgatives. A little blue-pill, with colocynth and henbane, or the hemlock extract, are good forms for a pill or pills overnight, and the bowels may be further assisted, if necessary, by tartrate of potash or some sulphate of magnesia compounded with liquorice extract, the decoction of aloes, and some compound tincture of senna, making a warm draught, to be taken in the early morning. These measures will be much aided by the exhibition of a good bitter, with some soda, and an aromatic tincture for a few days, such as the quassa, gentian, or the compound clove infusion. All these, however, can only be regarded as preliminaries, for experience has furnished us with an abundant evidence of the necessity which always exists, and soon becomes urgent, for a liberal administration of Battley's opium or morphia at night, and active tonics during the day. The preparations of bark, especially a cold infusion of the yellow bark, combined with a diluted mineral acid, are to be commended and advised in such circumstances. Half a grain of morphia, to be repeated, if need be, at shorter intervals, should be given at a stated hour every night. Often-

times the patient seems to depend for his very existence upon a full opiate once at least in twenty-four hours. Next in order, diet is the most important auxiliary at our command for enabling the system to supply the demand made upon it during the healing process. As a general rule, good beer and diluted alcohol are far preferable to wine at this period. Strong soups, jellies, also turbot, boiled tripe, and mutton-chops, seem to be amongst the most assimilable forms of animal matter, and more grateful to the digestive organs on these occasions than a more elaborate *cuisine*. A plain turtle-soup, where the patient is in circumstances to command that delicacy, seems to answer as well or better than any other form of aliment, when it is requisite to tempt or coax the stomach into a due discharge of its office. No rule, whether in health or disease, would appear to be more subject to exception than that which governs appetite. It is well, where the party has been much indulged, and is perhaps a large and accomplished eater, to ascertain the particular kind of food or drink to which the stomach has been principally used. As in a delirium tremens or a poor gout, so here it is well at times to give wine of a particular kind very freely. I have known a gentleman consume a bottle of port or madeira daily, in these circumstances, with great benefit to the general health, and that for many days in succession.

A carbuncle always impresses the powers of life considerably. If it attacks a person advanced in years, or one who is otherwise ailing at the time, the consequences are sometimes fatal, in spite of the best aid and greatest amount of skill and vigilance on the side of the surgeon. If he recover, such a subject should be warned of renewed excess, and especially exposure to cold.

It is not uncommon to hear that Mr. — is dead of an apoplexy or chronic dropsy; that twelve months ago he had a bad carbuncle upon the nape of his neck, and never subsequently regained his former health and spirits. To the surgeon, such a report is sufficiently intelligible. Younger men often rally very rapidly after such an illness, so that one might be almost tempted to believe, with the humoralist, in the effluence of some peccant humour *via* the carbuncle, which thus leaves the body cleansed and renewed in all the vigour of early youth.

The chlorate of potash, given in doses of from five to ten grains, three and four times a day, has appeared to me to exert a very beneficial influence in raising the patient's tone. The circulation and appetite both improve under its use during the time at which the sloughs are in course of separation. Some people seem to be at once over-stimulated by this preparation, and in others I have known it excite constipation to such an extent as to render its further exhibition quite inadmissible. Still, any notice of the mode of treatment to be observed on these occasions, would indeed be incomplete, were the name of this powerful salt to be omitted, or rather, were it not to be specially included in rehearsing the several

formulæ applicable at particular periods of the constitutional disorder.

CASES AND CONCLUSION.

In October, 1856, a maiden lady, sixty years old, feeble, with an irregular pulse at the wrist, showed me a large, hard, carbuncular mass, occupying the cheek and left side of the upper lip, prominent and much discoloured, the skin being on the point of giving way. I applied the potassa freely to the soft broken matters within. On the second day there was a large discharge of set-fast and spoiled tissue, with some healthy pus. In one week from the time of my first interference there remained only a small granulating space, not exceeding half an inch in diameter in any direction, and easily covered by a little circular patch of black plaster. This lady was convalescent, the sore having healed perfectly ten days after the application of the potassa.

Towards the close of December, 1856, I was desired by Mr. Barnes, of Chelsea, to see an old gentleman, with a very large carbuncle occupying the entire nucha, and extending from the upper occipital ridge above down to a line drawn horizontally across the spinous process of the last cervical vertebra. The skin was porous and much decayed, being of pale claret, or in some places of an ashen hue. It had been crucially cut at an earlier stage of the complaint, without any useful result. The patient, a retired naval officer, was restless and complaining much of pain at night. He had a very loaded tongue. The pulse was regular and sustained, but small in volume. In short, it would have been highly dangerous to incise the parts afresh in the case of this *old* man. I applied the caustic stick in four different places in this case; and on another occasion I made a fifth eschar. We directed, after taking the usual measures for the correction of the secretions, that this gentleman should have half a grain of morphia every night; a second half-grain to be given, if required, after the lapse of two hours, and a good bitter or bark draught three times a day, with wine or beer, as he pleased. The sloughs were very deep, but they fell off rapidly.

Jan. 10th, 1857.—There exists an enormous chasm, the skin having been much injured, and its organization changed by slow inflammatory action, before the caustic was applied.

March 20th.—I saw Lieut. R— to-day. There is a large cicatrix at the back of his neck, which gives him no particular inconvenience. The destruction of the fascia causes the muscles to bulge at one or two points, but motion is in no wise impaired. The wound finally closed quite three weeks ago. This gentleman's general health is perfect at the present time; in short, he is convalescent in all respects.

I could quote yet another example of the remarkable effect obtained by using the potassa rather than the knife, in an old and exhausted habit. It occurred in the beginning of February last, in a gentleman who had passed his sixtieth

year, and was much reduced by previous illness and mental suffering. He showed me what appeared to be little more than an inflamed pimple on the neck, near the root of the hair. Within a week, a spreading induration and swelling of the integuments had assumed the dimensions of an enormous carbuncle. Here, again, when the tumour began to soften, and a process of ulceration was commencing in the skin pores, I set on the potassa in three places, producing large eschars, which became rapidly confluent. The sloughs were deep and extensive; but in the third week there remained nothing but a clean granulating chasm, which healed up kindly. This gentleman was in a condition to justify the worst anticipations. He is now convalescent (March 28th), under the able superintendence of Mr. Prance, of Hampstead.

The very great indifference, or rather indissipation, exhibited by many members of the profession, either to accept or investigate the truth of these effects of a potential caustic upon the course of a carbuncle, is not easily accounted for. After all, my proposition is not new. I merely seek to resuscitate a practice which was declared to be perfectly satisfactory many years ago; but the truth will be recognised by all at last, and, in the meantime, I regard it as my bounden duty again to remind operating surgeons, that they are not justified in persisting in the former method, which has received the sanction of tradition, but does not carry with it the approval of truly scientific and discerning men. For some time to come, it is to be feared, that we shall continue to hear of many fatal cases of carbuncle. The following pithy observation, derived from the French, with which I shall close this memoir, will, no doubt, serve effectually to console survivors:—*"Si par la meilleure méthode vous avez sauvé la vie à un malade, et qu'on dise qu'il est bien heureux de n'avoir pas péri ayant été aussi mal-traité, le premier qui se présentera tuez le en suivant la mode du pays et on dira que vous l'auriez sauvé si la chose eût été possible."*—*Machiavel en Médecine.*

Dover-street, June, 1857.

ON MELLITIC DIABETES, IN REFERENCE TO ITS TREATMENT BY RENNET, OR LIQUOR PEPTICUS PRÆP.

BY DAVID NELSON, M.D., EDIN.,

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In a former paper upon this subject, which appeared in a previous number of *THE LANCET* I quoted certain general observations from a Clinical Lecture delivered by myself several years before, and published in the *Provincial Medical and Surgical Journal*. Appended to these observations were reports of three cases of diabetes, in which the rennet, or liquor pepticus præparatus, as it may be called, appeared to have acted in a highly satisfactory manner, and to the contents of that paper I beg to refer the reader

once more. Since then three more cases have come under my treatment, the results of which I will now lay before the profession, as additional and conclusive evidence upon the subject. But before doing so I will offer a few remarks upon the principle upon which the remedy is used, and which again suggests, as was observed by me at the conclusion of the former paper, a far more extended application of the medicine than merely as a sort of specific in diabetes, which it is not; for nothing can be viewed as a true specific, except that which acts by destroying the entity of the cause of disease, as mercury in relation to the syphilitic virus, muriatic acid to putrid matters, alkalies to acids, &c., &c.; whereas the rennet or liquor pepticus is simply a substitute for what is wanting in the body, being analogous to, or identical with, the constituents of the frame itself, within which it takes up its position, and performs its functions just as aptly as if it had been secreted within such body, and so had formed a natural portion of its scheme-work of organization.

Now, the practical application of this great principle as a matter of instinct, has been coeval with time itself, as evidenced in the use of animal flesh, the desire for water as a beverage, and the universal demand for salt, lime, sulphur, phosphorus, &c. &c., or their analogues, as represented in special kinds of food, such as garlic, onion, spices, fruits, and so on, each containing particular ingredients that are essential to the constitution of healthy blood, and of the other fluid and solid parts of the body. But the scientific recognition of the principle is of a date comparatively recent, and has only been the natural sequence of a more intimate knowledge of the elementary constituents of the living system, and of their relation to each other while within such system, as well as of the uses of the various complex fluids which are therein created, as it were, out of the primitive elements furnished originally from the soil or from the air. Thus, under such advanced knowledge in organic chemistry, has iron come to be *rational-ly* employed in cases of anæmia, gelatinoid phosphate of zinc in rickets, and various other diseases arising from mal-nutrition, cod-liver oil in deficiency of the fatty elements, ox-gall in torpidity of the liver, albumen in albuminuria, and even prepared blood itself in certain cases of defective assimilation, as affording to the stomach, like eggs and milk, all the various elements of nutrition nearly in the exact proportion in which they are wanted. We must recollect, however, that without a due supply of the healthy gastric juice, even such diets as those last mentioned could never be resolved into proper pabulum fit for the sustenance of the frame; and hence the obvious and direct utility of the rennet, or prepared liquor pepticus, in all cases where the digestive power languishes, as furnishing to a body incapable of duly producing it, that which is prepared within another body in a healthy condition. It is true that we already possess various remedies that may excite the stomach, &c., to increased activity, and gen-

tion, colomba, biberine, and all the other stomachics or appetizers, may succeed in our hands under certain circumstances; but in others again they will not. They all act in an indirect manner as gastric tonics or stimulants, and their effects will much depend upon whether the disorder be merely functional or organic. In the former case they will be efficacious; but in the latter scarcely or not at all, and perhaps even injurious. Not so with this gastric liquor, for the utility of its employment is as clear and direct as that of water itself to the thirsty animal or dried-up plant; and though it has not hitherto been regularly used for its medicinal ends, such accident is only illustrative of the old familiar fact, that plenty of knowledge may exist without being practically applied; just as the world knew of the expansive powers of steam, and of the rapid transmission of the electric fluid long before steam engines or electric telegraphs were devised. Empirically it certainly has been employed under the shape of whey-drinks, these having been considered remedial in cases of rickets, tabes, pulmonary consumption, and all the other varied forms of tuberculosis, or general granular degeneration. It has thus been exhibited just as burned sponge was wont to be used for granular accumulations, without any just apprehension of the essence upon which its efficacy depended. And even though Reaumur and Spallanzani, so long as about eighty years ago, clearly did demonstrate to the satisfaction of themselves and others, that the gastric juice, after being extracted from the body, could dissolve meats even in glass vessels, provided they were kept at a blood heat, yet, being more devoted as physiologists than physicians, they did not advance to the next step of the philosophic ascent, by practically applying it to the art of healing, but simply noted it as a curious natural fact. In such application, however, it has, beyond all possibility of doubt, very great power, and exercises a most beneficial influence in every case of sluggish digestion, whether proceeding from the more ordinary derangements of the stomach, or from general tuberculosis, or scirrhus, or cancer. Of such cases, more or less serious in their nature, very many instances might be cited since the former paper was penned; but at present it is desirable to confine the attention to its decided efficacy in a disease usually so intractable and mortal as mellitic diabetes.

Being desirous, in these occasional papers, of pursuing this subject strictly as a physician, whose business it is to have in view ends of practical utility, the writer avoids all indulgence in mere hypotheses, or speculations as to remote causes, and confines himself to that alone which, to his mind, is clear and demonstrable. As observed in the clinical lecture already alluded to, there can be little doubt, as a matter of abstract doctrine, that the essence of genuine diabetes consists in some deep-seated and "secret derangement of the ganglionic innervation" of the stomach, &c.; but at the same time morbid anatomy does not, as yet, enable us to say what the nature

of such derangement exactly is. Still, however, these derangements, as we know from innumerable other parallel cases, may be seated peripherally, as well as centrally, and, keeping this hard fact in mind, we are to guard ourselves against such fallacious modes of logic as might lead us into dangerous errors—errors which, though they be mere bubbles of amusement to the closet pathologist, become, in the hands of the practising physician, if adopted by him, weapons of life and death. Thus, even granting all the facts connected with those experiments first made in France, and subsequently in this country, with a view to show that diabetes was due to some lesion in a certain part of the medulla oblongata, it no more follows, because diabetic symptoms may arise on puncture of a certain spot in the digestive or respiratory track, that such diabetic disease is invariably and undoubtedly due to disease in that quarter, than that blindness, deafness, paralysis, or apnoea are constantly to be traced to lesions of the particular central lobes from which the nerves involved in these affections take their rise. But, on the other hand, the following propositions are plain, and almost undeniable, namely—

A. That all amylaceous or starchy matters within the living stomach are naturally changed, in the first instance, into sugar; which sugar is next, by a further process of digestion, converted into other complex forms fit for the nutrition of the body.

B. That, in the diabetic state, an arrest takes place at the saccharine stage of the process, apparently from a deficiency, or, what is virtually to the same purpose, a vitiation of the gastric digestive fluids, so that the sugar is absorbed as sugar, and as such expelled through the kidneys, without contributing to the nourishment of the system.

C. That languor, debility, and emaciation, &c., &c., necessarily accrue from such condition of the digestive organs, and ultimately must, and do, terminate in a mortal issue, unless means be devised to arrest or retard such downward progress.

D. That the gastric essence or essences of a healthy stomach, when well preserved from change are capable of effecting an almost perfect digestion within the unhealthy living stomach; so that the processes are carried on to such a degree as even to insure the natural conversion of the saccharine elements into nutritive material, with a consequent increase in the bulk of the body, and a partial or total disappearance of sugar from the urine.

The following reports of the three additional cases alluded to will serve to illustrate this last proposition, which is the only one of them not, as yet, generally taught and received.

CASE 1.—Mrs. P——, a lady residing in Shropshire, was first brought to me by her husband, on the 14th of December, 1854. She was about forty-six years of age, short in stature, and broad-built, but stated that she had been very much stouter, and her flesh was now observed to be soft and flabby, while her skin was harsh and dry. It was stated that she had been ill of dia-

betes for from twelve to eighteen months; that she drank water immoderately, again and again wakening in the night, with a parched tongue and a craving for water, that yet did not abate the thirst for any length of time. She had pain, flatulence, and a sense of weight about the stomach, and an oppressive sensation of debility and internal restlessness. She passed, according to account, between one and two gallons of water in the twenty-four hours, but nearer the latter quantity than the former, largely charged with sugar, so that on boiling with liquid potassa it changed to a dark port-wine colour, specific gravity 1035. The bowels were inclined to be costive. On this date, she was ordered to take some aperient pills at night, and a soothing alkaline stomachic bitter three times a day, while she had the prepared peptic liquor at each meal, which was to consist chiefly, but not solely, of nitrogenated matters.

On December 28th, her husband called again, and reported that she felt nothing now uncomfortable about her stomach; that the thirst had very much abated; that her spittle had returned, so that she could eat dry food without, as before, having to wash it down her throat, as it were, with foreign fluids. She was able to sleep till five in the morning without drinking or passing urine; and drank three or four pints in a day, while she passed three quarts and a half. Specific gravity of urine, 1028, and boiling with potassa to a dark sherry hue.

I did not see her again; but the following reports from her husband give a clear idea of her general improvement, setting all minuter details aside:—

Note I.—January 26th, 1855.—Dear Sir,—I am happy to inform you, that Mrs. P. still continues to improve in her health. She does not pass, I believe, more than three quarts of urine in the twenty-four hours; and her thirst is little more than that of an ordinary person in health. Her mouth is always moist with saliva. The only unpleasantness that she feels is from sharp shooting pains in her feet, particularly at night, which she has had, more or less, for the last six or eight months, and, I think, more violently of late. The feet are more moist than they were before taking your medicine.—I remain, dear Sir, yours faithfully, J. P.

Note II.—March 30th, 1855.—Dear Sir,—I am happy to inform you that Mrs. P. has got, as I may say, well of the complaint for which we sought your advice. She now requires no more to drink than any other person in health, and passes no more urine than from two to three quarts in the twenty-four hours. She has not been taking any of the rennet for the last ten days or so, as she has influenza, for which she has been taking medicine from an ordinary medical attendant, and from which she is now recovering. But I suppose she had better begin it again, as the weather gets warmer, and she will be able to ride out almost every day.—I remain, dear Sir, yours faithfully, J. P.

CASE 2.—Mrs. W——, a lady residing in London, had been on a visit to Birmingham, and had

intended to consult me on her arrival here; but, from certain causes, had deferred doing so until the evening before her departure for home—namely, on April 12th, 1855. She was tall, and large in person; was born and had resided in India many years and had been the mother of twelve children. She was of good complexion, had a fair appetite, and was of active mind, but stated that although now large, she had formerly been of much greater stoutness, and had for about twelve months past suffered under an unaccountable languor and depression after even the very slightest exertion. At this point of the conversation, the stethoscope was applied over her heart, but no unnatural sound was heard, nor any pausing, fluttering, or faintness of stroke. She then went on to say, that her stomach had troubled her, and that her thirst for cold water was such that she had to begin taking it almost immediately after breakfast, and that the craving continued during the whole day. She then, in answer to a question, admitted, that she passed much more urine than usual; and the whole history giving rise to suspicion of diabetes, hitherto undetected and unthought of, she was desired to submit a portion of her urine for examination, when it appeared that it boiled to a dark port-wine colour, and was of the specific gravity of 1040. Under the circumstances as it was not desirable to alarm or excite her in starting upon a journey, the diagnosis was not communicated to her the next morning; but the specimen of the urine presented, along with the portion operated upon, was given to her, and she was communicated with upon the day after her arrival in town, to the effect that there was diabetes, and that she should forthwith see her local medical attendant, meanwhile taking some stomachics, and being recommended to begin with the liquor pepticus. With these she persevered for some time, and, after one or two satisfactory communications from herself, I received one from her surgeon, one month after the commencement of treatment, of which the following sentences are the essential points:—

May 11th, 1855.—Dear Sir,—I have examined several specimens of urine presented by Mrs. W., and passed both before and after meals; and will now proceed to acquaint you with the result. The specific gravity does never exceed 1022, and has been as low as 1014. The colour is not very deep when tested with liquor potassæ. With sulphate of copper, and excess of liquor potassæ, a small amount of yellowish-brown precipitate is thrown down. The quantity of urine passed in twenty-four hours does not exceed two quarts, and is not disproportionate to the quantity of liquid taken into the system. There is a great diminution of the distressing thirst which she had formerly complained of, and her appetite and strength have considerably improved under the treatment. Altogether her present condition appears favourable, &c.—Yours very truly, J. S. G.

A more recent report comes from the patient herself, to the following effect:—

My dear Dr. Nelson,—I am happy to say, that

I feel a great deal stronger, and am improving in health. My thirst has decreased exceedingly; the urine has lessened to three pints when the weather is warm, but increases a little when cold.—On the whole, however, I may say that I *feel* perfectly restored; for which I feel very thankful to you. I still continue the use of the bitters and the rennet. I remain yours most sincerely, M. W.

(To be continued.)

THE SPECULUM OCULI, OR OPHTHALMOSCOPE: ITS VALUE AS A DIAGNOSTIC AID IN THE EXPLORATION OF CERTAIN OBSCURE FORMS OF DISEASE AFFECTING THE EYE.

By Jabez Hogg, Esq., M.R.C.S.E.

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AN accomplished and able physician, Dr. Mackenzie, has very properly said, "That the great secret in treating eye cases—the secret without which everything else must fail—is to know and discriminate the various states of disease to which the eye is subject. The successful removal of eye diseases depends almost entirely on accurate diagnosis. Discover what the disease is, make out accurately the pathology of the case before us, make out the *rationale* of the symptoms, local and general, and, if the case be curable, the cure is generally simple. Confound many different diseases, *huddle* them promiscuously together under a few general and perhaps unmeaning terms, and to a certainty we shall *mistreat* some of them."

It must be admitted that these remarks most forcibly apply to a certain class of eye-diseases hitherto *huddled* under the name of amaurosis; and the treatment of the same is too often only *mistreatment*. I have, therefore, felt the more anxious to bring this class of disease prominently before the profession, more for the purpose of eliciting opinions and exciting controversy than from any great amount of light I am able individually to throw upon the obscurity attending them. At the same time it is my desire to direct attention to the valuable aid we, in all probability, shall derive from the use of the speculum oculi; firmly believing, from my own limited experience in its use, that sooner or later it must effect important changes in our views, and assist greatly in our diagnosis of diseases affecting the internal structures of the eye; and likewise enable us to arrest, and more frequently cure, many of those cases we now believe to be incurable. I propose, then, to give a brief history of this instrument, and afterwards illustrate its value by the results of cases carefully examined at the Royal Westminster Ophthalmic Hospital.

Before I proceed to describe the simple form of instrument now in use, it will be but right to show to whom the merit of the invention chiefly belongs. I feel, by taking this course, I am simply doing an act of justice to a member of our own

College of Surgeons; especially as the ophthalmoscope is even now very generally believed to be the sole invention of the Germans, who were indeed the first to appreciate its worth and bring it to the notice of the profession. The earliest experiments made, and the deductions therefrom, were communicated in 1846 to the Medico-Chirurgical Society of London by Mr. William Cumming. He described the mode of proceeding, and his experiments were as follows:—

"Let the person to be examined sit or stand eight or ten feet from a gas-light, looking a little to the side; then approach him in a direct line, and at once will be seen the reflection of the bottom of the eye. If solar light be admitted through a closed shutter into a dark room, the patient standing five or six feet in front of the aperture, approach him as before indicated, when the luminosity of the interior of the eye will be immediately perceived.

"The only circumstances necessary for observing the interior of the eye, are—1st, that the eye must be placed at some distance from the source of light, the distance being greater as to the intensity; 2nd, that the rays of light diffused around the patient, and sometimes around the eye itself, should be excluded; 3rd, that the observer should occupy a position as near as possible in a direct line between the source of light and the eye to be examined.

"On approaching within a few inches of the eye the reflection is not visible, for before the eye of the observer can be brought within range of the reflected rays, the incidental rays of light are excluded.

"In cases in which the lens had been removed the reflection was indistinct at a distance, but was rendered clearer by the aid of a double convex lens placed before the eye under examination; but at two or three feet distant, the reflection was as obvious as in cases in which the lens was present.

"The brilliancy of the luminosity of the healthy eye appears to be in proportion to the light color of the pigment; for upon examining the eye of an Albino, by placing close to the eye a black card with an aperture a little larger than the pupil, the reflection was little brighter than that of a fair person examined side by side, but was of a more decided pink colour.

"If we dilate the pupil by atropine, we have a means afforded of seeing the condition of the retina and choroid in every eye, and thus we have an important and valuable adaptation as a mode of examining the posterior part of the eye."

Mr. Cumming then proceeded to inquire into the source or cause of this reflection:—

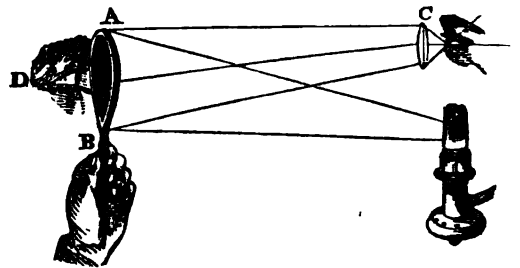
"The retina in the living eye is a perfectly transparent medium in contact with the choroid or vitreous body. The transparency of the retina is, however, no proof that it does not itself reflect many of the rays of light that impinge upon it, although the greater proportion are transmitted; the transparency of a structure being quite consistent with considerable reflec-

tion, but not with absorption of the rays of light; and thus reflection would be rendered more obvious by the position of the choroid."

Mr. Bowman, however, suggested that in all probability the choroid, with its pigmental layer, was the reflecting structure, and not the retina alone. To this conclusion our author, after having made numerous experiments, also arrived; for he says further on in his paper—"I regard the choroid as the principal reflecting structure, the light returned from the retina and concavity of the hyaloid body as increasing the effect; the concentrating influence of the concave shape of the retina, and the focal distance of the lens, greatly increasing the brilliancy of the reflection."

No notice seems to have been taken of Mr. Cumming's experiments in this country, and the following year they chanced to meet the eye of M. Brûche, Professor of Physiology at the University of Vienna. Here, with great opportunities for studying the phenomena referred to, he, with other surgeons, eventually succeeded in giving the form of our present instrument, the *speculum oculi*.

The ophthalmoscope I use is a small circular mirror, of about ten inches focus, being nothing more than the small size mirror belonging to the ordinary microscope, having a hole bored in its centre, and afterwards mounted in a piece of tortoiseshell.* The form of instrument in general use is that known as M. Ruet's, or M. Anagnostaki's. I have also used those of M. Coccia, M. Jaeger's, and a small portable instrument, so contrived, with the lamp affixed in its proper position, to be always ready for use. The mode of using the instrument is shown in the annexed diagram. (Fig. 1.) The rays from the flame of the lamp,



reflected by the concave mirror, A B, fall in a state of convergence on a convex lens, C, in front of the eye to be examined. By this the rays are so much converged by the additional refraction they undergo on entering the eye, that they quickly come to a focus, cross, and are dispersed over the retina, so that this membrane is fully illuminated. The observer's eye at D looks through the small central aperture in the middle of the convex mirror, which he holds in his hand. The patient whose eye is about to be examined, should be taken into a darkened room, and seated by the side of a table, on which is placed an ordinary lamp. The lamp must be

* This ophthalmoscope is sold by Baker, 244 Holborn, and Mathews, Portugal-street, Lincoln's-inn-fields.

brought near the patient's ear, and the flame so arranged that it may be in a straight line with the eye. The observer having taken his seat before the patient, on a stool capable of being raised or lowered (as a rule it is better to sit a little higher than the patient), the reflecting surface of the instrument is then to be turned towards the eye to be examined, in such a way, that the eye of the observer, when looking through the small central hole, may see, upon turning the instrument a little inwards, a luminous reflection of the interior of the patient's eye. On withdrawing it gradually, the reflection grows smaller, until it becomes oblong and very brilliant. It is in this way, or slightly modified according to circumstances, that the alterations in the several structures of the eye are to be observed. In the examination of most eyes we are obliged, for the sake of seeing the changes more clearly, to use a bi-convex lens of about two inches focus. Short-sighted people have an advantage, by being enabled to see clearly without this lens.

There are one or two little practical details which the beginner will do well to observe. In the first place, during the examination, the *right* eye (supposing the left to be used in looking through the apparatus in the mirror) must watch the movements of the globe of the patient under examination, and the reflection of the mirror at the same time, to see that it is kept upon the patient's eye. The light should not be too strong; a moderate light enables us to note the appearances without its producing fatigue to the patient. For ordinary examinations, the concave mirror is to be preferred; but when a feeble light only can be borne or we wish to direct our examination to the changes in the vitreous body, or the anterior part of the lens, then the plane mirror will be found to be the best suited to the purpose. Every examination ought to be begun without using the convex lens. It must not be forgotten that the concentration of a powerful light on the retina, if continued for more than a few seconds, does of itself place the part in an unnatural condition.

Next, with regard to our dilatation of the pupil with *atropine*. Although it would be next to impossible to investigate some cases without the use of this agent, yet, as a rule, I use it as little as possible; believing, from its known peculiar power over the iris, that it may produce congestion of the whole of the vessels to such an extent as to seriously embarrass the diagnosis. Atropine, to act on the pupil, must be first absorbed, and then it is said to exert a powerfully paralyzing effect on the third pair; patients complain of the annoyance caused by such dilatation, which often continues for some days. Should the sight afterwards become worse, then of course the surgeon will be blamed, and is said to have caused an aggravation of the disease.

You will find, in the greater number of cases, when the patients are taken into a darkened room, and a moderate lamp-light only used, the pupils dilate sufficiently for examination. When the rays reflected from the mirror are first allowed

to fall upon the fundus of the eye, a diffused glare only is noticed, but as soon as the proper focus has been attained,—which is known by a whitish circle with ramifying vessels coming into view, when the patient turns the eye slightly inwards,—then this red changes into an orange-red, or a tint of a lighter colour, as the case may be. The optic nerve is seen faintly tinged with pink, and from its central papilla emerge the artery and vein of the retina; the arrangements generally being, that an artery and vein pass upwards, and a similar pair downwards; both sorts of vessels then divide into many branches, which run towards the periphery of the retina.

The red colour in the healthy eye, varies in tint, and this is governed, as Mr. Cumming pointed out, by the complexion of the individual; in the fair, it is brighter; in the dark, it is more of a yellowish-brown. The redness is owing both to retinal and choroidal vessels, the former being distinctly seen branching on the uniform red field formed by the more vascular choroid, showing through the transparent retina. The arteries are distinguished from the veins by their less breadth and brighter colour. The mode of ramification of these vessels varies somewhat in different persons. The veins lie sometimes under, sometimes over the arteries, and accompany them, so far as regards the principal branches, more or less in their further course. No vessel of any kind covers the foramen centrale, or yellow spot, at least so far as I have been able to make out. In the examination of all objects lying behind the lens, it must be borne in mind that we are looking through that body, and consequently what we see is magnified. Then, again, by using a magnifying-glass to examine the changes in the retina, or increase the illumination in the interior of the eye, we must allow for the difference in intensity and size of the picture. I more particularly draw attention to this fact, as all my pictures have been made during examinations with the convex lens, and are thereby about four times larger than in nature.

Before an estimate can be formed of the pathological changes revealed by the ophthalmoscope, it must be evident that the normal picture presented by the background of the eye demands careful study; and the part borne by the different membranes in the production of this picture must be the subject of particular consideration. Great difficulty will at first be experienced in the appreciation of a depression or a prominence, say of the papilla optica, which depends in part on the alterations produced in the light and shade of inverted images, and the difficulty must be increased if a convex lens is used with the perforated mirror. When examining the condition of the crystalline lens, the plane or the concave mirror alone should be employed, and it must be viewed from every distance, and in an oblique position, as well as immediately in front of the patient. I have frequently succeeded by such means in discovering opacities when all other modes of investigation have failed. On the other hand, many cases pronounced to be incipient cataract, on a more careful inspec-

tion, of the defect, I have found to proceed from a deeper-seated cause.

A few days since, a mechanic presented himself at the hospital, who had been pronounced amaurotic. No visible change could be detected in the dioptic apparatus by daylight. I examined the eye with the ophthalmoscope, and perceived a grey-coloured central opacity on the posterior capsule of the lens. The retinoid vessels and optic nerve were at first seen with difficulty, but after a little while were made out to be in a normal condition.

It is quite unnecessary for me to dwell upon the importance of being able to diagnose with absolute certainty the cataractous form of disease. It is a question we are all often called upon to decide, and one which not unfrequently is as likely to implicate the character of the medical man as the safety of his patient. It is nevertheless at times very difficult to determine, not only the existence, but the seat of the cataract—to say whether the opacity which is seen, is on the crystalline capsule, in the lens, in the vitreous humour, or depends upon a change of the retina, or of the choroid coat.

In addition to the well-known subjective or physiological indications of this defect of vision, if the aid of the ophthalmoscope be sought, no doubt can arise as to the true character of the disease, or whether the opacity is *within* or *without* the crystalline capsule, constituting what is known as true and false cataract. In short, the whole of the anatomical changes arising from disease will be found to form so many objective symptoms for our guidance.

Opacities of the lens are mostly of a stellate form, and an anæmic condition of the vessels is usually associated with the change in the early stage. This fact has induced me to try the effect of blood tonics, believing that by attention to the general health, and improving the blood, we may perhaps arrest the formation of cataract; at all events, it is worth a trial, as in more than one case I have observed the cataract remaining stationary for two years and upwards, during a portion of which period the patients were under treatment.

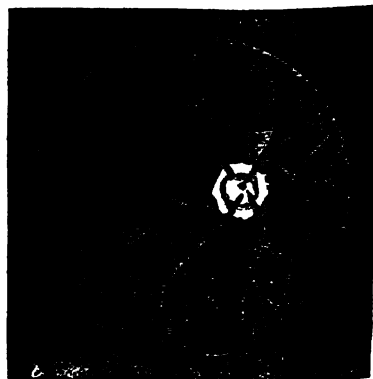
[*Note.*—Mr. Jordan of Birmingham has recently contributed 20 cases of great interest to the ophthalmologists, wherein he shows a frequent and intimate connexion between cardiac and ophthalmic disease, the existence and importance of which is placed beyond doubt by the labours of Reid, Burrows, and Watson. He says, "that non-traumatic cataract is frequently associated with, and in many instances may be fairly regarded as a result of cardiac impairment. No cause of cataract is known, unless heart disease be admitted to act as such. That admission being made, the causes of disease are numerous and undoubted." He then goes on to say, "The questions which now most naturally arise are these: What extent of heart disease shall favour the development of a cataractous opacity? Is there any particular lesion of the heart which more

than another predisposes to the affection in question?" These questions are in some measure answered in the affirmative by the cases adduced, and he believes "that much light may yet be thrown on the pathology of cataract by future microscopic examination of the opaque lens." In one case examined by him, "fat globules were revealed in the nuclei of the delicate cells covering the surface of the crystalline lens, and here and there a few delicate plates of cholesterine. . . . May not cataract be the result of a process identical with, or analogous to that of fatty degeneration? . . . Drs. Von Ammon and Schon have both found the lens and posterior capsule affected with fatty degeneration."—*Medico-Chirurgical Review*, April, 1857.]

The vitreous in its normal state is a perfectly homogeneous transparent body, and offers no obstruction to the passage of the light, when thrown into the eye. The most frequent pathological conditions of the vitreous met with, are its fluidity in different degrees, and its obscuration by the so-called *muscae*. I agree with Gräfe—"That the changes most difficult of detection are the diffuse or punctuated opacities, as they merely throw a veil over the picture of the retina, obscuring the sharp outline of the optic nerve and the retinoid vessels." By a more careful investigation, however, this veil will be seen to be composed of a vast number of molecules, situate in the different strata of the vitreous humour, constituting a fine, semi-transparent membrane, or delicate net-work of tissue before the background of the eye: during movements of the eye this often appears to be separated masses, which float about, and sink downwards when the eye is at rest.

These diffuse semi-transparent opacities disturb vision far more than those of a larger and darker character. This, doubtless, arises from the intervening parts of the vitreous being more transparent in the latter than in the former case. Opacities in the vitreous are often caused by effusion into it, or by exudation of lymph; and Gräfe describes cases in which he has recognised this condition as well as *intra-ocular hæmorrhages*.

FIG. 2.—Right Eye.



Anæmia, with effusion and partial insensibility of retina.

occurring periodically during intervals of a few months.

Within the last three years Gräfe has seen cases of cysticercus in the vitreous, or under the retina, with the ophthalmoscope. In three cases the patients suffered from tænia; in one other, cerebral symptoms, with paralysis of the arm, co-existed. He believes the cysticerci made their way into the eye from the brain.

Fluidity of the vitreous body, without myodesopia (floating substances in it), I do not remember to have seen; and the degrees of fluidity were various and well marked. The large quantity which I have seen floating about in some eyes, induces me to think the greater portion of the pigmentum nigrum must have become detached, and then escaped into the vitreous body. In a case lately examined, the patient being fifty years of age, his eyes, upon casual inspection, appeared free from disease; he had, indeed, been pronounced an impostor.

A diffused light, and the plane mirror, will show these changes better than a convex mirror; and there is no difficulty in determining the position of exudation, or of corpuscles, between the cornea and focal centre of the eye, or between the focal centre and the sensitive layer. Nor are we dependent on the elaborate reasonings of a Brewster for an explanation of the cause of this heretofore obscure disorganization, which the ophthalmoscope so readily proves must arise from one totally different to that supposed by this and other eminent philosophers, whose experiments, in some instances, it appears to me, must have originated the very bodies they sought to show the situation and existence of. I might instance one of the experiments, that of causing a person to search for the spectra "through the pin-hole in a card, or the eyeglass of a compound microscope,"—most fallacious modes of procedure, since we now know, by placing a card with a pin-hole in it before the eye, external objects, such as particles of very fine dust, so constantly floating about in the atmosphere, are by this means so much magnified, and at the same time so ill-defined, as to render it impossible for a patient to say whether the object he sees is floating outside or inside his eye. "Nothing serves so much to increase the perception of muscæ volitantes as often searching for them through pin-holes, lenses, &c. Such experiments seem to rouse them into existence; and he who has thus brought himself to discover them, continues to see them, and cannot get quit of them."*—Effusions of blood into the vitreous may be very readily distinguished from other opacities, and fixed spots upon the choroid, or over the yellow spot of Semmering.

In a few patients complaining of spots, flakes, or shreds before their eyes, I have been unable to detect exudations into the vitreous, but have found a congested state of the retinoid vessels

sufficiently great to account for the idea of shreds or spots being before their vision.

As to the treatment of such cases which present themselves at our hospital, they are frequently associated with general debility, overwork, bad feeding, bad air, sequelæ of fever, or with long-standing and weakening disease of other parts of the body—in some few they have arisen from a syphilitic taint,—mostly in the chronic stage, and consequently more benefit has been derived from the administration of alteratives, with tonics, or blood-tonics, than from any other plan of treatment.

I shall now offer a few remarks upon the changes in the retina and choroid, the pathological indications of which are more obscure and liable to mistreatment than that of other structures.

"Amaurosis implies no definite and ascertained disease; it is only a word expressive of our own ignorance as to the causes of our patients' blindness."* That it is an *obscurity of vision* depending upon some morbid change of the optic nerve, itself, or from the retina becoming incapable of receiving the impression of external objects through the medium of light, is, I believe, an accurate and well-established fact. There is, however, no subject in ophthalmology more likely to receive additions and corrections, in proportion as it is investigated on sound pathological principles, than the very obscure disease amaurosis. In its various forms, stages, and degrees, we shall, I doubt not, find the ophthalmoscope of the greatest value, since with it we can at once determine whether the disease is in the acute or chronic form, in the confirmed or inveterate stage, or is one of atrophy of the nervous and arterial systems.†

It will suffice to remind you, that amaurosis is divided into, first, sensorial, having its seat on the retina, optic nerve, or optic tubercle; secondly, cerebral, as when it arises from diseases in the hemispheres of the brain, water in the ventricles, or tumours attached to the dura mater; third, spinal, when it springs from disease of the fifth nerve, and is attended by ocular anæsthesia; fourth, ganglionic, as when affections of the digestive or the generative system give rise to it. It is chiefly with the first, or sensorial, and the fourth, ganglionic, that we have to do most frequently at our hospitals, and in the investigation of which we shall find the ophthalmoscope of the utmost importance, especially when in cases of congestion or inflammation, or where the changes of form, colour, or vascularity of the nervous structure are combined with the more immediate causes of disease. It also possesses a certain ne-

* Mr. J. Dixon's Practical Study of Diseases of the Eye.

† The late most excellent and eminent surgeon, Mr. Guthrie, so long as he could move about, would examine his patients with the ophthalmoscope; and when, from loss of strength, he could no longer follow the bent of his inclination, he requested that I should attend at his house, for the purpose of assisting him in making the examinations and describing the appearances presented. His vigour of mind and enthusiastic delight in any new mode of investigating or treating a disease never forsook him, to the last moment of his invaluable life.

* Mackenzie, "Diseases of the Eye."

gative value in other forms, as by its aid we are enabled to say that the cause is *not sensorial*, and consequently must be referred to some other form, ever keeping in mind the important fact, that a large number of cases of amaurosis take their origin, not in the eye, but in the sympathetic irritation excited by disease of near or remote organs, such as caries of the teeth, excessive indulgence in smoking or chewing tobacco; the stomach, the bowels, the liver, the kidneys, the uterus; or arises, not from local, but from constitutional causes; and what adds to the difficulty attendant on the etiology of this melancholy disease, not unfrequently in one and the same case, different causes, or even opposite kinds of causes, combine in its production. Bright's disease is sometimes the cause of loss of sight. I have lately seen a well-marked instance in a patient who has been afflicted with Bright's disease for several years; only a few months since the sight of the right eye became dim, and has been gradually going on from bad to worse. Many of the cases I shall bring before you are an exemplification of the value of attention to such points, both in diagnosis and treatment.

Another point of importance is the discrimination of glaucoma from other affections of the eye. We are able to say with the ophthalmoscope that in glaucoma the dioptic media of the eye are or are not involved, and which, indeed, more frequently cause it to be confounded with cataract than with any other form of disease; although in the commencement of glaucoma the opacity always appears to the practised eye to be deeper-seated than the lens, and the characteristic greenish colour occupies the centre of the vitreous humour, which at last approaches the posterior capsule of the lens, and probably the structure of the lens itself. The lens then becomes, as Mackenzie has stated, "*diplo-chromatic*," that is, it has the power "of analysing the incident light; absorbing the violet, blue, and red rays, leaving the yellow and green rays but little affected, so that they are dispersed; whence results the apparently green appearance of the humours." This, he says, "is borne out by the well-known fact, that various natural as well as artificial substances present a different colour, accordingly as they are seen by reflected or refracted light."

While on the subject of glaucomatous appearances, and the peculiar brightness of the back of the eye in this disease, I may mention that Beer seemed to have included, under the name of *cat's-eye*, the silvery reflection in the eyes of old people, and also that appearance which we observe occasionally in children, resulting from scrofulous and non-malignant depositions at the back of the eye; this condition the late Mr. Tyrrell bestowed much attention upon and described so well, and proved that vision is not always impaired in such cases. Mr. Tyrrell believed that this affection existed in the choroid, or between it and the retina: as the reflection is only seen by daylight, and when the observer stands near the light and a little on one side, with the child

placed some distance from him. Mr. Cumming, upon attentively observing this reflection, came to the conclusion that it proceeded from the choroid with its pigment—as the principal reflecting structure of the eye,—and became increased in effect by the light returned from the retina and the concavity of the hyaloid body. And with regard to Beer's assumptions, Mr. Cumming came to this conclusion, that he was speaking of the reflection in a healthy eye at one time, and at another of a case in which lymph had been deposited on the retina, causing the bright metallic appearance, and that this mere luminosity of the retina is in no case a sign of altered condition.* He was right in his conclusions no doubt, when we reflect for a moment upon the chief supply of blood to the interior of the eyeball, and how much that, in all probability, must affect the reflective media of the eye. In the choroid and iris almost the whole of the red blood of the eye is concentrated. There is a small quantity in the sclerotica, not a large quantity in the retina, and none in the crystalline, vitreous, or cornea. The transparency of the refractive parts of the eye forbids that they should be traversed by red vessels; and were such vessels large and numerous in the retina, its sensibility would certainly be interfered with.

I have digressed for the purpose of reminding the reader, not only of the normal appearance presented in the eye, but of the part borne by the different membranes in the production of the pathological changes revealed by the ophthalmoscope. Alterations in the retina change and obscure the normal aspect of the choroid; exudations between the retina and choroid, or into the substance of the latter, will have a similar effect. Should the retina become detached from the choroid by serous effusion, the retina is then pushed forwards towards the lens; the ophthalmoscope will detect its existence, and affirm its extent with certainty. Whenever the retina or the entrance of the optic nerve exhibits great brilliancy, partaking of a bluish glittering, we may of a certainty say serous infiltration has taken place, and such cases are very difficult to treat. The periphery of the optic nerve, being a fixed point, prevents the further extension of the effusion, and the infiltrated or detached parts become raised around, and apparently hang over it; the raised portion has a slight reddish appearance, and is sufficiently transparent to permit of our seeing the choroid through it. On several occasions I have noticed, as a diagnostic of anæmia, a mass of pigment deposited and exposed around some portion of the optic nerve, generally at its periphery; or large masses are collected together as fixed black spots upon an anæmic choroid.

The presence of quite white spaces in the choroid

* In a case of long-standing amblyopia (defective sensibility of the retina), in which the eye presented the characteristic glaucomatous appearance—the pupil being dilated, with slight congestion of the conjunctival vessels—the only change that could be detected was an opalescent appearance of the retina, with atrophy of the retinoid vessels.

is worthy of notice, and appears to indicate in such spots the obliteration or bloodlessness of the

FIG. 3.—Left Eye.



Partial insensibility of retina, with exposed patches throughout choroid.

choroid; a general pallor of the whole interior, and especially of the optic nerve, which appears larger than in the normal eye, is an accompaniment of such a change.*

Post-mortem examinations have proved that a very white and dilated appearance of the optic nerve may be regarded as a sign of fibrous degeneration of the papilla optica. Gräfe has shown this, and gives a very interesting case examined by him:—"In a man who had been blind for some years, but without showing signs of cerebral disease, the ophthalmoscope showed a tendinous white papilla, and very delicate central vessels. Death was caused by pulmonary consumption. The post-mortem showed structural change of the thalami and corpora striata. The optic nerves were atrophied, dark grey, and gelatinous, until they reached the chiasma, but from this point they degenerated into dense white fibrous cords; the papilla also consisted of tendinous tissue. Only here and there a few nerve-fibres were observed. The retina could not be satisfactorily examined on account of the advanced state of decomposition."†

Gräfe in the same paper directs particular attention to the detachment of the retina from the choroid by extravasation or exudation, as well as by exudation of plastic lymph, by the production of tubercular disease, and by cancerous growths. Donders has carefully analysed and represented colloid degeneration of the pigmentary cells of the choroid, a form of disease not yet made out in this country with the instrument. Congestion of the choroid (choroiditis), and, indeed, anæmia of this structure, frequently met with, always exhibit a peculiar train of *subjective* symptoms, so that it is to be hoped by more careful examinations the organic changes will be readily recognised, and

this disease never mistaken or mistreated. At all events, in the very often uncertain indications of external symptoms, we have now the certainty of not mistaking an anæmic for a congested condition of the choroid and other internal tissues, and the ophthalmoscope, like the stethoscope, will enable us to determine the amount of impairment of vision in the patient's eye, without its being necessary to ask of what he complains. A few words before we conclude will be sufficient to indicate the treatment adopted in the cases that have fallen under my care, although the recital of special cases will be a better guide.

In a disease arising from so many causes, I may state, generally, that the larger number of cases which have fallen under my observation are those either in the *incipient* or *incomplete*, or in the *confirmed* or *complete*, stages of amaurotic disease. My first care has been to discover the cause, and treat that especially, persisting for a long time in my remedies. Amongst the poor, the general health seems to demand our first care; and as the greater number of patients present themselves badly fed, and in a low condition of health, it follows that my remedies have been chiefly directed to the removal of this state; at the same time, I have seen considerable benefit derived from a mild mercurial course, combined with tonics, such as minute doses of the biniodide of mercury, with bark and other bitters. This, persevered in, has, in my hands, been attended with a greater amount of success than any other plan of treatment.

If I may judge from the discussion which followed the reading of my paper on the Ophthalmoscope at the Medical Society of London, I should incline to the belief that, even at the present time, much difference of opinion prevails in this country with regard to the value of the instrument as a diagnostic aid.* This, doubtless, arises with most observers, who, on taking it up, find it to be very difficult to project the reflected light into the eye, and at the same time to bring the fundus into focus. Then, again, the complications of some of the instruments invented and employed, increase the difficulties without offering any advantage over the simple instrument I have ventured to recommend. As with many other instruments, the more simple the more manageable it becomes.

Another and more serious source of failure is the pernicious use of atropine. I have repeatedly seen a drop of a weak solution of atropine pro-

* Can this condition be in any way connected with the fact that such patients often see better in a dull light, or towards twilight in the evening? We know that in some nocturnal animals, which hunt their prey towards or during the night, the choroid is destitute of pigment, or rather it is covered with white pigment in place of black, and this appears of service by increasing the action of the luminous rays upon the retina.

† Gräfe, Arch. ii. p. 363.

* "Dr. Jago who has written on 'Ocular Spectra,' is very sceptical as to the possibility of muscæ volitantes becoming visible to another person. He more than hints that some of the ophthalmoscopists, who have described the 'shreds and flakes' they have seen in patients' eyes, have unwittingly written down the wonders of their own visual organs. We will not dispute the possibility of such confusion of ownership when inexperienced persons are using the ophthalmoscope, but with skilful observers it is impossible. If this were so, why then all eyes examined by the same ophthalmoscopist must give the same appearances of 'shreds and patches.' That it is so, every one who has used this instrument can most positively deny. We suspect that the ophthalmoscope has not become familiar to Dr. Jago. When it has, we believe that he will admit abnormal conditions of the vitreous humour, which at present he rejects, and will promote the degraded muscæ to the position assigned to them by observers not inferior in reputation to himself."—MEDICO-CHIRURGICAL REVIEW, April, 1857, p. 481.

duce in the healthy eye a very large amount of congestion of the retinoid vessels, more than sufficient to embarrass the diagnosis of any case, and which might well be mistaken for a diseased retina and choroid. On this account I have discontinued its use, and find no difficulty whatever in causing sufficient dilatation of the pupil, by simply placing my patient for a short time in a darkened room.

I often hear of great fatigue, or an aggravation to the symptoms, occasioned by the large amount of light thrown on to disorganized or delicate tissues. This can only arise in careless or inexperienced hands, and may very properly be designated an abuse of the instrument. Should an active inflammatory state of the iris or other membranes co-exist, the discomfort to the patient, produced by a very dull light, is quite sufficient to protect the organ, and prevent mischief. I firmly believe that we shall ultimately find the ophthalmoscope take its place by the side of the stethoscope in our investigation of certain forms of disease.

My belief will, I am sure, derive greater value from a recital of cases lately, and at present, under treatment at the Royal Westminster Ophthalmic Hospital.

FIG. 5.—Right Eye.



Hemiopia.—Insensibility of half the retina, with fixed black spot over the *foramen centrale*.

FIG. 6.—Left Eye.



Hemiopia.—Insensibility of half the retina, with fixed black spot over the *foramen centrale*.

Hemiopia.—Insensibility of half the retina in both eyes (Figs. 5 and 6).—Eliza A——, aged thirty-nine, married, has always had good health and sight until twelve years ago, when a rash broke out, which she said looked like measles, over her body; she had also a sore-throat, which was so bad as to prevent her swallowing, but does not remember having had any pain or redness in the eyes. She soon after discovered *muscae* in her left eye, which moved up and down like little specks of soot, and found also, when reading, that the letters appeared to be on one side. A short time after, a semi-transparent blue veil, about the size of a shilling, appeared in the left eye, which partially obscured her sight when she looked at anything, but was not sufficiently dense to preclude her reading moderate-sized type. The sight of this eye has lately become worse, so that now on looking straight forwards she can see nothing immediately in the axis of vision, but anything situated at the outer side she can see just well enough to recognise. The right eye was healthy until three weeks since, when she felt some slight shooting pains through it, but did not discover any diminution of sight until three days ago (Dec. 19th), when she found it so dim as to prevent her reading the newspaper. This patient says she has had several miscarriages during the last twelve years, but has three children living who are healthy. Before the sight of her left eye failed she used to notice flashes of fire when closing her eyes to sleep.

Examination by ophthalmoscope.—Left eye: cornea, lens, and humours clear; entrance of the optic nerve has a brownish, dull-yellow tint over it, vessels are distinct, though small. Towards the position of the yellow spot is a patch of rather larger size than the optic nerve, the ground of which resembles that of the optic nerve; but, in several parts, fragments of brown and black pigment are to be noticed; the margin also of this patch appears of a deep brownish-red. There are also some bright-red streaks running parallel to one another at the lower part. The rest of the bottom of the eye has a brownish-red cast; the retinoid vessels appear distinct though smaller than in a healthy eye.—Right eye: humours clear; entrance of the optic nerve much the same as the left; the bottom of the eye appears of a brownish colour, but is streaked with white, and immediately over the position of the yellow spot itself, is a dark spot, nearly covering it. Below the horizon, the bottom of the eye has a dull, brownish-red cast; the retinoid vessels are small, but perfectly distinct, as in the left eye.

Dec. 30th, 1856.—She can read large print with the right eye if she looks down with the left eye; but says that when looking for a moment or two, a *spot*, the size of a threepenny piece, appears to come over the sight at the part she is looking at, which does not, however, entirely obscure the type, but renders it indistinct. States that she was subject to bleeding at the nose when she was suckling; and that when she menstruated the bleeding was more severe. The

epistaxis has ceased about twelve months. Bichloride of mercury and the decoction of cinchona bark mixture was prescribed for her. This she continued until January 16th, 1857, when, a slight diarrhoea setting in, this was changed for small doses of mercury with chalk and rhubarb, every alternate night, and compound rhubarb mixture twice a day.

Feb. 2d, 1857.—Improving; examined by ophthalmoscope; the black spot is not quite so large, but a very large quantity of pigment still obscures the retinal vessels in the left eye; the right is improving.

9th.—Examined by ophthalmoscope; right eye still improving; can see better; left optic nerve much clearer, and fewer spots. Catamenia very scanty; "thinks she should feel better if it were more natural." Ordered, compound iron mixture, one ounce, twice a day.

25th.—Improving in sight and general health. Since returned to the country much improved.

CASE.—*Musca volitantes*.—E. K.—, female, aged fifty, admitted as an out-patient June 29, 1855. A delicate-looking person; pulse small, 60; has always had weak sight, and on several occasions, inflammation of the eyes; general health she considers to be good; married, and has several children. In 1853 her eyes became dim, and since then she has had a film floating about in the right eye; the dimness continued to increase up to the present time, and now vision is almost gone. The left eye is not yet in so bad a state, and sufficient vision remains to enable her to see her way about.

Examined by ophthalmoscope.—In the right eye masses of greyish streaks are floating about, the retinal vessels congested, irregular, and not well-defined; the capsule of the lens slightly thickened, especially at its periphery; the left eye is less congested, and apparently without floating masses. Ordered a tonic mixture, containing soda, rhubarb, and infusion of quassia, with occasional and small doses of mercury pill. In a few weeks she was able to distinguish objects more clearly, and under a continuance of this treatment, the sight improved in the left eye; with the right eye she was able to read tolerably-sized print. The *muscae*, or grey masses, became much less apparent, and in two months she left the hospital believing herself cured.

CASE.—A. B.—, aged twenty-nine, law clerk, applied June 29, 1855, with congestion of the retina of left eye. A thin, tall, light-complexioned, nervous man. Described the complaint as having, during several months, given him much annoyance. At that time he could not see to read or write with it; general health tolerably good, but frequently suffering from bilious attacks. The iris of left eye slightly differs in colour; the lens, which appeared opaque by daylight, upon examination with the ophthalmoscope, was found not to be so, this colour evidently being due to congestion behind the lens; the vessels of the retina very irregular, and so much congested as to nearly conceal the entrance of the optic

nerve; patches of serous effusion were seen between the choroid and retina; this eye only sensible to light at the inferior and internal portions. Mercurial pill, with aperient draughts, were ordered daily, under which treatment he much improved; tonics were then prescribed for a fortnight, and at the end of a month he was able to resume his occupation.

This case is valuable as showing the use of the ophthalmoscope, not only in deciding the question of opacity of the lens, but enabling us at once to direct attention to the seat of disease. Hence the treatment became most efficient. I have lately seen this patient, and he tells me he has had no return of the affection; but has been carefully following the advice given as regards resting the eyes as much as possible, and attending to his general health.

CASE.—R. R.—, aged fifty-three, a cook, applied on the 20th July, 1855. She states that her sight began to fail about two years ago, but has been able to do needlework until very recently; suffers from headaches and bilious attacks, which always increased the dulness of sight. General health, though not very good, has always permitted her to perform her daily work. Catamenia ceased ten years since. She now has a web over the right eye, which increases in size at night, and is accompanied by pain over the brow and head.

Examined by the ophthalmoscope.—The retinoid vessels much congested; a thick red web obscures the optic nerve. Left eye less congested than the right, and sight better in it; she indeed depends upon it for the small amount of useful vision remaining. A few grey striæ float about in the vitreous; lens quite clear.

Ordered a powder every night containing eight grains of calomel with five grains of Dover's powder, followed by an aperient draught every morning. Cantharides plaster to the neck. The effect of the mercury was kept up by a mixture of biniodide of mercury in decoction of bark; and at the end of two months she left the hospital, very much improved.

(To be continued.)

ON PHOSPHORUS AS A POISON.

By C. W. BINGLEY, M.D.,

LECTURER ON CHEMISTRY TO THE SHEFFIELD SCHOOL OF MEDICINE.

CASES of poisoning by phosphorus being comparatively rare, especially when the substance is employed as a means of committing suicide, the following example is not altogether void of interest. The interest in the present case is still further increased when we consider the form in which the poison was taken, the rapidity with which it seems to have destroyed life, and the facility with which the substance was detected after death.

The patient was a man aged fifty, a painter by trade, and an habitual drunkard. During the

fortnight previous to his death he had been in a state of constant intoxication, and had scarcely partaken of any food. The exact time when he took the poison could not be ascertained, but he was seen in his usual state of health about twelve o'clock on the night previous, and early on the following morning his body was discovered in a field two miles and a half distant. On a post-mortem examination by Mr. Herbert Walker, surgeon, great muscular rigidity was observed twenty-eight hours after the body was found. On examining the head, the membranes of the brain were found much congested; and there was some serous effusion between the arachnoid and the pia mater; the substance of the brain was also somewhat congested. The heart was nearly empty of blood, flaccid, and had a considerable quantity of fat on its external surface. The mucous membrane of the oesophagus, stomach, and small intestines was in a state of high vascularity, and exhibited here and there small patches of ulceration, or rather of abrasion, although in one or two parts of the stomach the mucous membrane was almost entirely destroyed. On opening the stomach there was an escape of white smoke, accompanied by a strong smell of garlic. The stomach contained about a table-spoonful of a viscid greenish matter. Having been requested to search for strychnine and arsenic in the stomach, I boiled it in water acidulated with acetic acid. On allowing the mixture to stand a few minutes, transparent globules, along with small gritty particles of a deep-blue colour, separated. On examination, the globules, which varied in size from that of a pin's-head to a small pea, proved to be pure phosphorus, and the colouring matter prussian blue. Neither strychnine nor arsenic was found. From phosphorus and the sesquiferrocyanide of iron being present, I concluded that the deceased had poisoned himself with vermin-destroying paste made of a mixture of phosphorus and lard coloured with prussian blue.

Being anxious to ascertain the exact physiological effects of this substance, I made some experiments on animals some months ago, in concert with Dr. Harley of University College, London. We first gave to a frog two pills, containing one grain each of Roth and Ringeisen's Phosphor Paste. The animal appeared to suffer no inconvenience from the dose during twelve hours, when it voided by stool both pills, apparently unchanged. It was found dead, and in a state of rigor mortis, thirty-six hours after the pills had been administered. The post-mortem examination revealed no abnormal appearance.

To another full-grown frog Dr. Harley and myself gave two fluid drachms of a saturated solution of phosphorus in oil; the frog was put into a large glass jar, which soon became filled with the fumes of phosphorus emitted from the mouth and nostrils of the animal. The frog died in the course of twelve hours after taking the solution. On opening the body, no sign existed to indicate death by poison.

To a kitten about three months old, Dr. Har-

ley and myself gave five grains of the phosphor paste, repeating the dose twenty-four hours afterwards. No symptoms of poisoning having manifested themselves within ninety-six hours after the first administration of the poison, the animal was made to swallow other twenty grains of the paste; in an hour afterwards it was seized with frequent fits of vomiting, followed by twitchings and violent convulsions, evidencing extreme suffering until death ensued in rather less than an hour after the vomiting commenced.

On post-mortem examination, the pulmonary vessels were found full of venous blood. The right side of the heart was engorged with blood; the left side empty; a tea-spoonful of serum in the pericardium. Gall-bladder quite empty and shrivelled up. Hepatic veins engorged. Spleen not enlarged, but unusually dark in colour. Abdominal cavity contained about two or three tea-spoonfuls of serum. Lower part of oesophagus covered with a thick layer of mucus. The intestines felt hard, like a cord, under the finger. On opening the stomach, which was half contracted, there was an escape of white fumes having the odour of garlic. The stomach contained nothing more than about two tea-spoonfuls of mucus; it was lined with a thick layer of tenacious yellow mucus, about one-eighth of an inch thick. No ulceration of the mucous membrane existed, but some congestion at the middle and pyloric end of the stomach. Throughout the whole extent of the small intestines there was a very thick layer of yellow mucus; no contents. The rectum alone contained fecal matter, which was of a greenish colour, not blue like the poison that had been administered. The vessels of the brain and spinal cord were slightly congested; the nervous centres were otherwise quite healthy.

On a subsequent occasion I gave forty-five grains of phosphor paste to a full-grown fowl, together with two grains of solid phosphorus. Twenty-four hours afterwards it seemed well, and ate its food, as if not in the least affected by the poison, but six hours later I found it quite dead, though warm; the muscles of the back, breast, and legs were quite rigid.

On post-mortem examination no marks of internal inflammation were found. The crop was full of food, and lined with a thick, brownish-yellow, viscid mucus, and had a strong odour of garlic. On opening the folds of the gizzard, white fumes escaped in considerable quantity. The small intestines appeared contracted, and lined with a thick coat of mucus similar to that in the crop, and which, in fact, formed the whole of their contents; but the large intestines were, as in the case of the cat, full of hard, green, feculent matter. In order to discover if much of the poison remained in the tissues of the fowl, I fed two full-grown cats with the heart, lungs, liver, and gizzard, during two days. At first they appeared to suffer no inconvenience from the food, but after remaining apparently quite well during eight days, one of the cats manifested symptoms of acute pain, which were rapidly followed by convulsions. The con-

vulsions continued more or less strong until it died, four hours and a half after the first symptoms of poisoning presented themselves. The other cat, which had escaped from its place of confinement, was next day found dead in a state of extreme rigor mortis. On a post-mortem examination being made, both animals were found to present very similar appearances. The right side of their hearts was flaccid and empty, the left side firmly contracted. The lungs and most of the abdominal organs were found somewhat congested. The mucous membranes of the stomach were highly vascular, and in both cases the organ contained a quantity of mucus and half-digested blood. It is worthy of remark that the gall-bladders were quite empty, just as was found in the case of the kitten experimented upon by Dr. Harley and myself. The membranes of the brain and spinal cord in all three cases presented the same slightly congested appearance. On analyzing the contents of the stomachs, I detected only a trace of phosphoric acid, while in the brain, liver, heart, lungs, and muscles, I found it in a more appreciable quantity.

In order to ascertain the effects of phosphorus as a poison, when administered in large doses, I gave a full-grown healthy cat, at half-past four P.M., sixty grains of phosphor paste. Next morning it was found dead, and in a state of rigor mortis. On examining the body, the same appearances were present as in the previously cited examples, and phosphoric acid was found in the blood as well as in the heart, liver, lungs, and muscles.

From the results of these experiments, I conclude that phosphorus may act, in the first instance, as an irritant poison in exciting inflammation of the mucous membrane of the stomach, not being so active an irritant, however, as either arsenic or corrosive sublimate; but from the symptoms immediately preceding death, I incline to the opinion that this poison bears considerable analogy to strychnine in the manner in which it acts upon the animal frame—not by a direct action upon the nervous system, as was formerly supposed, but by preventing the assimilation of oxygen by the constituents of the blood. From the analyses of the blood, flesh, brain, heart, liver, and lungs of the animals poisoned by phosphorus, we saw that phosphoric acid was present in abnormal quantity. It therefore appears that the phosphorus enters into combination with oxygen in the stomach, to form phosphoric acid, and it is doubtless as such absorbed into the blood. The inflammatory action in the mucous membrane of the stomach would most probably take place during the slow transformation of the phosphorus into phosphoric acid in that organ. Dr. Harley has shown, by direct experiment, that strychnine and some other poisons possess the property of so modifying the organic constituents of the blood as to render them incapable of absorbing oxygen and exhaling carbonic acid, and thus becoming fitted for the purpose of nutrition; and pointed out how they may in this manner produce con-

vulsions, and ultimately destroy life. I imagine that phosphorus, like many other poisons, acts upon the blood in the manner ascribed by Dr. Harley to strychnine, and thus in a similar way destroys the life of the animal.

Sheffield, 1857.

MIDWIFERY STATISTICS.—LENGTH AND TORTUOSITIES OF THE UMBILICAL CORD.

By JOHN S. BEALE, Esq., M.R.O.S.E., &c.,
Paddington.

On looking over a record of midwifery cases attended by myself, I was astonished at the number of times in which the umbilical cord was found encircling the neck. In 1220 cases, it was once wound round the neck in 175, twice round in 32, and thrice round in 7 cases. In one case, the cord was crossed over the chest and back, and looped under both axillæ; it measured 58 inches in length. In 3 cases, there was a single knot on the cord, and on one funis were two knots. Dropsy of the cord occurred once, increasing its breadth to two inches, and rendering it very tortuous. The shortest cord was five inches in length. (In Dr. Rigby's "Midwifery" there is mention of a case in which it was but two inches long, and another in which its length was 61 inches, *vide* page 182.) I did not notice any unusual retardation of the labours in those of my cases to which I have referred, only more or less lividity of the neck and face, according to the time spent in the head passing into the world.

These cases give, as the average, about 1 in 5 in which the cord is so coiled. It seems surprising that in cases of alleged infanticide the plea of death being caused by the pressure exerted by the funis (without help) has not been seized upon to any extent by the counsel for the defence, for such a liability must tend to diminish the chances of life. These cases, however, rarely go beyond a charge of concealment being sustained.

Paddington-green, May, 1857.

ON STRYCHNIA POISONING, AND ANALYSIS.

By ERNEST P. WILKINS, Esq., M.R.O.S., F.G.S., &c.,
Newport.

Ma. G——, aged twenty-three, took three grains of strychnia on a biscuit, with suicidal intent, Feb. 8th, 1857, at ten P.M., and retired to bed. He was first discovered by his screams, or rather "bellowsings," at half-past ten P.M., and he died at four A.M., Feb. 9th. My assistance in the case was requested by Mr. Tuttielt. We found him suffering from frightful periodical tetanic convulsions of the voluntary muscles and congestion of the face. At first opisthotonos was so severe as to force him off the bed on to the floor. During the attack, the feet were inverted, the soles of the feet arched, the fingers clenched (not forcibly), the elbows flexed, the arms bent over the chest, the eyeballs fixed and protruding, pupils dilated, the neck stretched backwards and twisted. The attacks occurred at intervals of half an hour, more

or less, and were so violent as to shake not only the bed but even the house.

After the attacks subsided very copious sweating ensued. His consciousness was perfect. He acknowledged to have taken the strychnia, and feared he had not taken sufficient. He conversed in gasps, asked to be held when the tetanic attacks were coming on, and to be turned over during their presence; he also asked for drink, but took it with difficulty, as the attempt brought on convulsions, and was effected only after several attempts; when swallowed, it was ejected by jerks. During the intervals of his periodic convulsions, sudden and powerful shocks and twitchings occurred; these were produced or increased by the slightest touch. The twitchings of the muscles of the face resembled those of epilepsy. He had a feeling of dread, and begged he might not be left alone. He died asphyxiated during a violent convulsive attack, which fixed all the respiratory muscles. The heart was observed to beat after respiration had ceased; the pulse, which had been 150, became feebler gradually, and ceased to beat.

Our treatment consisted of emetics of sulphate of zinc, which produced no effect; the throat was tickled with a feather, which produced slight vomiting. An attempt was made to use the stomach-pump, but it produced such terrible convulsions, and he bit upon the gag so fearfully, that we decided to desist, and gave camphor, ammonia, and chloroform. We remained with the patient till he died.

Autopsy, seven hours after death.—The body was remarkably rigid, so as even to allow it to be lifted up by the heels like a piece of timber. The surface of the body was much congested, especially the legs; the toes were not incurved. In thirty-five hours after death, when we opened the body, the fingers were rigidly contracted, although the general rigidity had in some measure subsided. The dura mater was congested, as was also the upper and posterior part of the right hemisphere of the cerebrum. The plexus chorioideus was tinged with dark blood; the puncta vasculosa were numerous and large; the ventricles contained more serum than natural; the pericardium contained no serum. The heart was flabby, the right side filled with frothy, dark blood, mostly in a fluid state; the left side empty. The lungs were congested with blood of a darker colour than natural. The intestines were healthy, but distended with flatus; the liver healthy; the bladder contained half-a-pint of urine.

I forwarded the stomach with its contents (undisturbed) and other viscera (and some blood) to my friend, Dr. Marshall Hall. This he forwarded to Professor Taylor, who has taken the trouble to make an analysis. In a letter to me, he says: "I have waited, however, in order that you might know the results obtained in Edinburgh and Dublin, as well as in London; and I only received the report of Dr. Christison and Dr. Douglas MacLagan yesterday morning. We have all three, acting independently, used a process

known as that of Stas of Belgium, which has been found quite inadequate to detect strychnia in the bodies of animals poisoned by a quarter of a grain.

"Dr. Geoghegan, professor of medical jurisprudence in the Royal College of Surgeons, Ireland, made a minute analysis of the kidney. He reports that, with the greatest care, he could not detect the slightest trace of strychnia by any one test or property. On subsequently adding a minute portion of strychnia to the residue, it was immediately revealed.

"Drs. Christison and Douglas MacLagan had the portion of lung and liver which you sent. They have examined both, and report as follows: 'The result is, in one word, wholly negative. We worked by Stas's method; everything went smoothly with the manipulations; and eventually not only did the bichromate of potash fail to give any reaction of strychnia, but in no stage of the process—alcoholic, watery, or ethereal—was there the faintest trace of bitterness,' &c.

"I had the assistance of Mr. Scanlan, a good pharmaceutical chemist, who has manufactured the alkaloids. We occupied three weeks in our analysis, operating on, 1st, the blood; 2nd, the heart; 3rd, the coats of the stomach; 4th, the contents of the stomach.

"In the three first there was not the slightest trace of strychnia, either by taste or by any of the tests. In the dry residue from contents of the stomach we obtained, by one colour test, a slight purple passing to a red colour. The liquid, however, had rather the bitter taste of caramel than strychnia. No crystals of strychnia could be procured. Hence, but for the fact that we knew deceased had died from strychnia, we should have placed no reliance on this result. In short, when a man's life depended on the answer, I should decline to say that such a result was conclusive of the presence of strychnia.

"I may remark that your case was particularly favourable to the discovery of the poison in an *absorbed* state, if it admits of unequivocal discovery, as the man lived five or six hours, during which time there would have been a much larger deposit (if any) in the tissues, than would occur where death took place in an hour or two.

"You have here, then, the results of men who have been many years engaged in these researches for poison, who can have no interest whatever in altering or suppressing facts, or stating anything but the truth; and, further, the case was one which above all others should have shown the 'absorbed' poison, if it could be shown, and the result is this: A man may die from strychnia; some of the poison may or may not be found remaining in the stomach according to dose and other circumstances, but not a particle of the poison, in an absolute state, will be found in other parts of the body!"

P. S.—This communication has been delayed for the result of experiments by Dr. Marshall Hall with the frog's strychnoscope. This I have not received, but will send on to you as soon as it arrives.

Ile of Wight, May, 1867.

EXPERIMENTS ON ARTIFICIAL DIGESTION.

By THOS. K. CHAMBERS, M.D., F.R.C.P.,
LECTURER ON THE PRACTICE OF MEDICINE AND PHYSICIAN
TO ST. MARY'S HOSPITAL.

The following experiments seem to exhibit

pretty clearly the power of dissolving coagulated albumen possessed by different reagents employed for that purpose in artificial digestion. Pieces of hard-boiled white of egg were carefully wiped and weighed, and suspended without motion for

		Temperature Fahr.	Weight of Albumen tested.	Weight after 24 hours.	Loss per cent.	REMARKS.
—	—					
I.	Ten grains of a powder prepared by Godfrey and Cooke with gastric juice dried upon starch, mixed with lactic acid (in imitation of M. Boudault's " <i>Poudre Nutrimentive</i> ," No. 1), with three grains of hyposulphite of soda.	100	Grains. 39.0	27.2	32.2	The remaining mass of white of egg was much cracked and very friable, so that some accidental loss is possible.
II.	Ten grains of Boudault's own " <i>Poudre Nutrimentive</i> ," No. 1.	98 to 104	42.2	31.2	26.0	Sweet.
III.	Ten grains of the above-named imitation of Boudault's " <i>Poudre Nutrimentive</i> ," No. 1.	98 to 104	42.0	31.3	25.5	Sweet.
IV.	Fifteen grains of Boudault's " <i>Poudre Nutrimentive</i> ," No. 1, some old cheese chewed, and a few drops of hydrochloric acid.	90	13.3	10.1	24.0	Sweet.
V.	Ten grains of Boudault's " <i>Poudre Nutrimentive</i> ," No. 1.	98 to 104	30.8	23.7	23.0	Sweet.
VI.	Fifteen grains of ditto	90	7.2	5.7	20.8	Sweet.
VII.	Ten grains of Godfrey and Cooke's imitation of ditto.	104	34.3	27.3	20.1	Sweet.
VIII.	Fifteen grains of Boudault's " <i>Poudre Nutrimentive</i> ," No. 1, with half an ounce of neutral saliva added to the water.	90	14.7	11.1	20.0	The solution had become strongly acid.
IX.	Ten grains of Godfrey and Cooke's imitation of ditto, as in Experiment VII.	104	35.8	28.7	19.8	Sweet.
X.	Ten grains of a more finely powdered imitation of ditto, made by Savory and Moore.	ditto	36.2	29.2	19.3	Sweet.
XI.	The same	ditto	38.1	31.1	18.3	Sweet.
XII.	Fifteen grains of Boudault's " <i>Poudre Nutrimentive</i> ," No. 1, with a little saliva, not enough to neutralize the lactic acid.	50	16.5	13.9	15.7	..
XIII.	Old cheese chewed, and 20 drops of lactic-acid solution.	104	32.3	27.8	13.9	Sweet.
XIV.	A tea-spoonful of " <i>Liquor Pepsinæ</i> ," prepared by Titterton, Birmingham.	90	14.9	12.9	13.4	Sweet.
XV.	Four grains of dried and powdered gastric juice, prepared by Savory and Moore, quite sweet and dry.	98 to 104	34.3	29.9	12.8	It had become foetid, but was still acid.
XVI.	The same, with 20 drops of lactic-acid solution.	104	34.6	31.0	10.4	Sweet.
XVII.	Fifteen grains of Boudault's pepsin, saliva, and 2 grains of sulphite of soda.	98 to 104	14.9	13.5	9.3	No smell.
XVIII.	Six grains of a soft, pasty, concentrated gastric juice, prepared by Savory and Moore, with 20 drops of lactic-acid solution.	104	36.3	33.3	8.2	Sweet.
XIX.	The same, without the lactic-acid	98 to 104	42.0	39.5	5.9	Very foetid and alkaline.
XX.	Twenty drops of lactic-acid solution	98 to 104	34.3	45.5	+	Much swelled and soft.
XXI.	The piece of albumen digested in Experiment IX, wiped, and put in old cheese and lactic-acid solution.	60	26.3	27.3	+	No apparent change.
XXII.	Boudault's " <i>Poudre Nutrimentive</i> ," No. 1, 15 grains, with 3 grains of sulphite of soda.	50	17.5	17.8	+	..
XXIII.	Titterton's liquor pepsinæ, saliva, acidified with hydrochloric acid, and no water.	50	16.4	16.7	+	..
XXIV.	Hydrochloric acid and distilled water	104	6.0	6.5	+	Softened and transparent.
XXV.	The gastric juice as in Experiment XVIII, syrup of figs, neutralized with liquor potassæ, and some loose pieces of albumen.	100	40.6	41.9	+	The mixture, from being neutral, had become highly acid, from the formation of lactic acid.

twenty-four hours in beakers containing the solvent to be tested, mixed with about two ounces of water, and kept in a water oven at an even temperature. This of course does not exhibit a fair picture of the action of such reagents in the stomach, where the constant rolling movements, and the wiping away immediately of each successive portion dissolved by the copious stream of gastric juice, offer such favourable conditions. But it is a better comparative test than if the motion and stream are imitated artificially, as the attempt to do this acts unequally on different specimens. I should advise all persons purchasing pepsine thus to estimate the value of the articles offered them.

It will be observed that the experiments are placed in the order of the percentage which was dissolved of the albumen in each case. Some of them were made simply for the purpose of ascertaining which was the most reliable preparation of those commonly in use; others form part of a series illustrative of the function of digestion in health and disease, which I will take a future opportunity of using.

The results bearing on the present subject appear to be as follows:—

1. The most efficient mode of preserving the qualities of gastric juice is by separating the pepsine with lead and drying it on starch, as recommended by M. Boudault. (Compare the first nine experiments with the rest.)

2. The more exact the imitation of the process, the better. (Compare the first nine with Experiments X. and XI.)

3. A low temperature lessens the action even of the best (Exp. XII.), and utterly destroys that of the worst. (Exp. XXIII.)

4. Lactic acid alone has no digestive power. (Exp. XX.)

5. Even when generated during digestion from grape sugar it has no digestive power. (Exp. XXV.)

6. Hydrochloric acid alone has no digestive power. (Exp. XXIV.)

7. Saliva impedes the solution of albumen in proportion as it neutralizes the acids in the solvents. (Exp. VIII., XII., and XXIII.)

8. Hyposulphite of soda arrests decomposition, but not digestion. (Exp. I.) Sulphite of soda destroys weak and impedes strong digestion. (Exp. XVII., XXIII.)

On these grounds I have continued to employ Boudault's preparation, in spite of its high price. I have never found it fail in performing the duties demanded of it, except in cases quite unsuited to its exhibition. Those preparations which decompose, though they retain some solvent power, produce, as may be observed in the experiments, indigestion at the same time with digestion; that is to say, they cause chemical decomposition, unless arrested by the presence of acid.

That lactic acid should stimulate the action of a weak stomach is comprehensible enough; and probably in many cases it assists digestion by acidifying alkaline saliva or mucus swallowed;

but solvent power it has none, and therefore can be of no service in the instances which are the true triumphs of pepsine,—viz., where the secretion of pepsine is annulled by disease.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

JUNE—JULY.

SIR C. LOCOCK, PRESIDENT.

CASE OF DOUBLE TALIPES VARUS, IN WHICH THE CUBOID BONE WAS PARTIALLY REMOVED FROM THE LEFT FOOT. By Samuel Solly, F.R.S., &c.

THE sufferer in this was a South American, aged twenty-one, a stout muscular man of lymphatic temperament, difficult of control, and particularly sensitive to pain. Both feet presented perfect specimens of the deformity, the left being, however, much the worse, being shorter and more inverted than the other. None of the muscles of the lower extremities were perfectly developed. The treatment first commenced (June 7th, 1852) with the division of several tendons as well as the plantar fascia, and the application of mechanical apparatus; it was continued through the two following years, during which period two more divisions of tendons were made, and a variety of apparatus (including all the ordinary, as well as a variety of novel, forms) employed. The result was good as regarded the right foot, but most unsatisfactory with the left. Such, however, was the peculiar character of the patient, such his impatience under pain or restraint,—leading him, as it did, to loosen the apparatus and remit the pressure on every opportunity,—that Mr. Solly considered himself warranted in adopting the suggestion of Dr. Little, that he should remove the cuboid bone, which seemed the bar to the ultimate success of the case. On June 11th, 1854, Mr. Solly accordingly proceeded to remove nearly the whole of the bone, cutting quite through it, and opening the articulation with the metatarsal bone of the little toe, but not that with the os calcis. So complete was the effect that the foot could immediately be bent beyond the mesial line in the outward direction, and the finger placed in the chasm was painfully pinched when the foot was so turned. The good effect of the operation, however, was much marred by the loss of three weeks which expired before pressure could be applied. The procedure was not attended with any constitutional disturbance, and the wound healed in fourteen days. In December, 1854, the tendons of the tibialis posterior and flexor communis were again divided; since that period instruments have been relied on for the completion of the cure. The feet are now (January, 1857) fairly on the ground,

and the patient bears his weight upon them, and walks with the aid of a stick. The author concluded by observing that although the operation for the removal of the cuboid bone has undoubtedly greatly facilitated the cure in this particular case, yet he did not consider the effect produced to be such as to encourage the profession to perform the operation, except in some few old and obstinate cases which might have resisted every other treatment; and in the event of a recourse to such a procedure, Mr. Solly advised the removal of the entire bone, as tending to produce a more permanent effect than resulted from the operation in this case.

Mr. LONSDALE did not wish to criticise Mr. Solly's mode of treatment; but would state from his own experience, which extended over many hundreds of cases, that he had never seen the least necessity for performing so serious an operation as that of the removal of the cuboid bone for deformity. His cases, too, had ranged over ages varying from infancy to twenty-eight or thirty years. He thought Mr. Solly had terminated the treatment where he should have commenced it. If he had applied the long splint, and kept the foot everted, by using firm compresses and screw pads, he would have effected by mechanical means all that had been done by the knife.

Mr. W. ADAMS understood that Mr. Solly did not recommend the operation to be generally performed, but only in special cases. His patient would not submit to the treatment which had been applied, and the bone was removed in consequence. This case, however, did not bear out the anticipations of Dr. Little respecting the advantages of removing the cuboid; for the apparatus could not be properly applied afterwards, in consequence of the sore on the foot left by the operation. This might, however, be remedied in future by the use of an apparatus which he (Mr. Adams) had constructed for removing the pressure from the foot to the leg.

Mr. SOLLY reminded Mr. Lonsdale that in the case before them the long splint and other means to remedy the deformity had been persevered in for some time before the operation without success.

Mr. BRODHURST objected entirely to the removal of the cuboid bone for the relief of deformity. Amongst other objections to the proceeding, was the presence of the wound on the outside of the foot, which prevented the application of force to that part. But even if this sore did not exist, he contended that it was wrong to remove the cuboid bone at all, as its removal would, in fact, have little to do with the removal of the deformity. There was nothing in Mr. Solly's case calling for so serious an operation. He questioned if in any case that could occur, the removal of any of the tarsal bones would be justifiable, and the cuboid bone least of all. It was not the bone principally at fault. Division of the ligaments would be a more justifiable proceeding.

Dr. LITTLE thought the profession were indebted

to Mr. Solly for his case. The proceeding was a novelty in surgery. Looking at all the circumstances of the case, and at the fact of the patient being about to leave the country lame, he thought he had every reason to be satisfied with what the surgeon had done for him. He (Dr. Little) considered that the removal of the cuboid bone was not only justifiable, but was necessary to meet all the requirements of the case. He did not advocate, and never had advocated, ablation of the cuboid bone as a part of the ordinary treatment of even severe adult varus. He had only suggested that in inveterate adult varus the treatment might well be reduced from twelve months to six or eight weeks by that operation. He differed from Mr. Brodhurst respecting the removal of the cuboid bone on the deformity; for if any operation of the kind was advisable, the removal of that bone was likely to be effective in restoring the form of the foot.

Mr. SOLLY remarked that the cuboid bone in this case was the only obstacle to the bringing the foot into its proper position. This was proved to the satisfaction of Mr. Adams and himself. He had no doubt of the effect of the operation in restoring the foot to its proper form. The sore on the outside of the foot was not, however, the only objection to the operation, for the foot altogether was inflamed, so that the apparatus could not be applied. Still, the removal of the deformity was complete. He had been blamed for not keeping on bandages and apparatus for a long period, but in this respect the patient thwarted him in every way. Under the circumstances he had resorted to the operation, and the patient had derived the greatest benefit from it. Indeed, he now regarded the foot which had been operated upon as the stronger of the two.

ON SCIRRHUS OF THE MALE BREAST. By J. L. Milton, Esq., M.R.C.S.

THE patient whose history formed the basis of this paper was a man aged fifty-eight, a healthy but very intemperate person, the father of nine children, eight of whom were still alive. No scirrhus could be traced in any of the family. He attributed the affection to the constant pressure which his employment (that of a brass-finisher) compelled him to make on the left side of his chest, just below the nipple. The disease began two months previous, as a small hard nodule just below the left nipple. About four months afterwards, finding that it steadily increased in size, he applied to a "doctress," who gave him hemlock to use both outwardly and inwardly. The swelling slowly increased to the size of a walnut, and at the end of the seventh month sloughed out. When first seen (three months later), there was found a large cup-shaped cavity, the base of which was covered with a thick, tenacious, greenish secretion, dotted with black; the edges were thick and livid, but not everted. The surrounding skin and cellular tissue were extremely hard. In the vicinity enlarged cutaneous veins were noticed.

There was a smaller ulcer just below, and several tubercles were seen in the vicinity. The ulcer was not offensive, and discharged a moderate quantity of sanious fluid; it occasionally bled very slightly, and was attended with but little pain or uneasiness; its surface was callous. One gland in the axilla was a little enlarged; the mammary gland on the right side was indurated; the lymphatic glands in both groins were somewhat harder and larger than natural. The patient had of late lost both flesh and strength. There was great difficulty of breathing. Stethoscopic examination revealed extreme feebleness of the breathing sound, interrupted by very long pauses. Left side dull on percussion; each respiratory movement attended with a heaving of the whole trunk. There was no expectoration beyond a little mucus. The pulse was small. Nothing abnormal was detected in the abdomen, but the urine was always brown, quickly became foetid, and was loaded with urate of ammonia. No operation was attempted; sedatives were given, but did not afford so much relief as ether. The breathlessness rapidly increased, and a choking sensation was felt on attempting to eat. During the last fortnight of his life he never lay down. He died May 3rd, 1856, five weeks from his first visit. No post-mortem examination of the internal organs could be obtained, but the tumour was removed; it was found to be very slightly adherent to the pectoral muscle.

The tables accompanying the paper exhibited twenty (including the present) cases of this disease in the male, of which the histories could be obtained, and thirteen of which the histories were defective. Of the former, one patient was an American, one an Italian, one a Frenchman. Two, from the context, were also supposed to have been Frenchmen. The remaining fifteen cases, being all collected from the records of English hospitals, were assumed to have occurred in the persons of Englishmen. The writings of French, English and American authors alone yielded any information on the subject. Those of German, Italian, Irish, and Scotch authors contained, with the exception of a clinical lecture by Mr. Liston, nothing of interest or importance. It was therefore very difficult, if not impossible, to decide with any certainty on the relative frequency of this disease in France, England, Scotland, &c. The cases collected warranted the inference that it was equally common in those three countries, contrary, as the author believed, to common conviction. The earliest period at which the disease was found to have commenced was twenty years of age; the latest, in the eighty-third year. In three cases the patients sank from extension of the disease to internal organs, in eleven, thirteen, and fifteen months. Three others died—two in four, and one in five years. In two of the three cases also from extension of the disease to internal organs; in the third, this was presumed to be the cause. In one of the cases, fatal in four years, there are some grounds for believing that removal would have warded off the fatal result. In one

case of death from cachexia and exhaustion, the date was not ascertained. In seven cases the disease was removed; the patients recovered, but had not been heard of since. Of five others operated on, one died six years after, without any return of the disease; one at the expiration of fourteen months; another, "a considerable time" after, had experienced no relapse; one was alive twelve years after; one unknown. One patient, not operated on, was living several years after the discovery of the disease. The early appearance of the disease in some of these cases reopened the question whether it were dependent on decay of the reproductive faculty, or according to Mr. Paget's opinion, on decay of nutrition? The author considered that, unless it were conceded that a gland might grow prematurely old and diseased, as the hair follicles, teeth and eyes will, in certain cases, it was difficult to admit either hypothesis. It seemed also doubtful if the cause and symptoms of this disease were alike in the male and female; the three cases in which death ensued at an early period, having been apparently attended with less pain and destruction of the breast than occurs in the female. It appeared from the average of the cases to be of a less fatal nature in man than in woman.

ANALYSIS OF FIFTY-TWO CASES OF EPILEPSY OBSERVED BY THE AUTHOR. By Edward H. Sieveking, M.D., F.R.C.P., Physician to the late Duke of Cambridge, Lecturer on Materia Medica at, and Assistant-Physician to, St. Mary's Hospital.

THE 52 cases analyzed had occurred exclusively under the authors own observation, and the conclusions were limited to points with reference to which satisfactory evidence could be obtained.

Sex.—24 were females, 46.15 per cent.; 28 were males, 53.84 per cent.

Age.—The following is the distribution of the cases throughout the different periods of life:—Under 10 years, 17; from 10 to 20, 19; 20 to 30, 4; 30 to 40, 4; 40 to 50, 7; over 50, 1; or from infancy to the age of 20 years inclusive, 69.23 per cent.; from 21 to 40 years inclusive, 15.38 per cent.; from 41 to 55 years inclusive, 15.38 per cent. Arranged according to sex, we find during the first decennium, 8 males and 9 females; during the second, 12 males and 7 females; during the third, 2 males and 2 females; during the fourth, the same number of each; during the fifth, 2 males and 3 females; during the sixth, 1 female. The male sex during puberty, therefore, seems to exhibit a more marked proclivity to epilepsy than the female; at later periods the ratio returns to the equality shown to prevail during the first ten years of life.

Causes.—Hereditary tendency could be traced only in 6 cases, or 11.1 per cent. A definite cause was assigned by the patient or the patient's friends in 16 cases, or nearly one-third of the whole. Amongst these, otorrhœa is mentioned twice; fright, twice; injury to the head, twice.

The cases differ in the relation they bear to the occurrence of the seizure.

Premonitory Symptoms.—The occurrence of an "aura" is a point on which observers have expressed different opinions. Comprising under this term all the premonitory symptoms indicating the approach of a fit, it is noted in 27 out of 52 cases; the most common was a sense of giddiness and impairment of vision; sometimes the patient suffered pain in a definite region of the body, or, though unable to explain the sensation, is aware of some change from which he knows that a paroxysm is about to take place. The sensation was never described as a puff of wind or aura in its verbal sense.

Individual Symptoms.—Headache is a very frequent concomitant of epilepsy. It was observed in 33 out of 52 cases, or 63.42 per cent. The mode of its occurrence varies; the patient either suffers habitually or very frequently from it, and the symptom bears no immediate relation to the paroxysm; or the headache occurs shortly before the fits, so as to usher them in; or again it affects the individual after they are over. It was constant or frequent in 36.5 per cent.; it occurred before the fits only in 7.7 per cent.; it occurred after the fits only in 17.3 per cent. Biting the tongue is justly regarded as an important corroborative symptom; but it is by no means uniformly present, nor does it constantly occur in the different paroxysms affecting the same individual. The tongue was bitten in 17 cases, or 32.7 per cent. The urine was tested for albumen in 19 cases, and it was found temporarily present in one, permanently in one. It was also tested for sugar in 14 cases, and this ingredient was not found once—a result which seems irreconcilable with the observations of Dr. Goolden.

Results of Treatment.—The author ventured to express a feeling of scepticism with regard to the positive certainty of any cure of epilepsy. He believed that, in the majority, no organic lesion, in the ordinary anatomical sense of the word, was present in the commencement of the disease, and that, in a large number, none seems to result from the recurrence of the fits. It appears that a diathesis is necessary to its recurrence, and that this may be suppressed or held in check; but whether it may be eradicated, is a question which he would not venture to answer in the affirmative. He was satisfied of the power of well-selected remedies in repressing, and often indefinitely postponing, the paroxysm, and he particularly insisted on the importance of dietetic and regiminal treatment. The number of apparent cures was 15, or 28.85 per cent.; in other instances, more or less benefit was obtained. The duration of the disease before treatment is commenced, has an obvious influence over its curability. Eight of the 15 (apparent) cures were wrought in cases that had lasted one year or under, four were of two years' duration, one of three, one of six, and one of eight years. The treatment adopted had varied with the nature of the constitutional affection in each case; but he was able to draw

this general inference, that the main indications which should guide us, are to remove local irritation by counter-irritants, to promote the healthy action of the secretory organs, and to give a tone to the constitution by vegetable and metallic roborants. The author expressed his belief that there was no specific for epilepsy; the salts of zinc certainly fail to remove it in many cases.

In a postscript he detailed the results of an analysis of the Returns of the Registrar-General with reference to sex in deaths from epilepsy during seven years; which gave 6729 males, and 6149 females, or 52.26 of the one sex to 47.73 of the other.

Dr. WEBSTER remarked that epilepsy was on the increase, as was proved by the fact, that in London, nearly double the number now died of that disease that did only twelve years since. Epilepsy was more frequent in London than in Scotland; for even in the town population of that part of the kingdom, the number of epileptic cases was only one in three as compared with London. The disease was common in France and in the South, whilst insanity was more common in the North than the South. With respect to the comparative frequency of epilepsy in the sexes, it was more common in early life in women; about equal in the sexes at middle age, and more frequent in men than women in advanced life. This brought the number in the sexes to about equal. Amongst the frequent causes of epilepsy in young people, fright and terror might be mentioned. One of the worst cases he (Dr. Webster) had ever seen was in a young woman who had been frightened by "a ghost." Amongst older persons, dissipated habits and drunkenness were common causes of epilepsy. He thought it was hereditary in more cases than stated by the author. Instead of 11 per cent., as given by Dr. Sieveking, he thought it was 35 per cent. at the least. In the last report of the New York Asylum, it was mentioned that during that year, in all the epileptic patients admitted, the cause of the disease was hereditary; or they were the children of drunkards. With respect to treatment, he thought it was only in early life that we could expect much good from remedies. He had seen cases cured in early life, but very rarely indeed afterwards. The effect of the much-vaunted mineral medicines was usually but temporary. It was essential in these cases to regulate the diet, and to avoid mental excitement.

Dr. A. P. STEWART had been surprised to hear that in none of Dr. Sieveking's cases was there disease of the kidney. He (Dr. Stewart) had had three cases under his care during the last eighteen months, associated with disease of that organ. He could not then say how many other cases of a similar kind had occurred to him, but some two or three years since he had three such cases. He should have been glad to have heard more particularly what remedies had been employed by Dr. Sieveking. He (Dr. Stewart) had used most of the remedies recommended for epilepsy, and had carried the dose of sulphate of zinc to the

extent of twenty-five grains three times a day; in some instances it did good, in others it rather aggravated the disease. In two cases he had used nitro-muriatic acid externally and internally, as recommended by Dr. Hunt; it was of use in one case, but not in the other.

Dr. SNOW said that Mr. De la Rue had presented him with specimens of two volatile hydrocarbons, distilled from Rangoon tar, which he (Dr. Snow) found to produce symptoms just like those of epilepsy in animals which inhaled them. The guinea-pigs and white mice on which he had experimented with these substances, continued to walk about, and appeared quite conscious up to a certain point, when they were suddenly attacked with violent epileptic convulsions, and were insensible during the fit. If they were removed from the vapour as soon as the convulsions commenced, they recovered rapidly, without subsequent ill effects of any kind; but if they were allowed to remain in the vapour, they died in half a minute or a minute. He observed that the white mice became rather livid just before the convulsions commenced.

Sir CHARLES LOCOCK had noticed the omission in the paper of a very common cause of epilepsy—viz., dentition. He did not quite agree with Dr. Ashburner, that all cases of the disease could be cured by the removal of a tooth; but he had certainly seen the affection cured in more than one instance by removing over-crowded teeth. A great number of cases of epilepsy, both in boys and girls, arose from the practice of onanism. This was a cause very frequently overlooked, and might account for the great increase of the disease of late years. There was a form also of hysterical epilepsy connected with the menstrual period, and as periodic as that function. This form of the disease was very difficult to treat. The attacks only occurred during the catamenial period, except under otherwise strong exciting causes. He had been baffled in every way in the treatment of this affection. Some years since, however, he had read in the *British and Foreign Review*, an account of some experiments performed by a German on himself with bromide of potassium. The experimenter had found that when he took ten grains of the preparation three times a day for fourteen days, it produced temporary impotency, the virile powers returning after leaving off the medicine. He (Dr. Locock) determined to try this remedy in cases of hysteria in young women, unaccompanied by epilepsy. He had found it, in doses of from five to ten grains, three times a day, of the greatest service. In a case of hysterical epilepsy which had occurred every month for nine years, and had resisted every kind of treatment, he had administered the bromide of potassium. He commenced this treatment about fourteen months since. For three months he gave ten grains of the potassium three times a day. He then gave the same dose three times a day for fourteen days before the menstrual period, and latterly had only ordered it in the same dose, three times a day, for a week before

the expected catamenia. This patient had had no epilepsy since the commencement of the use of the potassium. Out of fourteen or fifteen cases treated by this medicine, only one had remained uncured.

Dr. WEBSTER remarked that Onanism was, no doubt, a frequent cause of epilepsy, more particularly in southern climates.

Dr. SIEVEKING had not enumerated onanism amongst the causes of epilepsy in his paper, because it was not the assigned cause in any instance by the patient. The difficulty really was to arrive at the truth with respect to the influence of this cause in the production of the disease, and he confessed he did not know how to proceed to determine it in the case of females.

ON THE TREATMENT OF WOUNDS OF THE PALMAR ARCHES BY FORCED FLEXION OF THE ARM. By J. GILES, M.R.C.S.

AFTER allusion to the various troublesome complications, and frequent very serious consequences which attend wounds of the palm, when circumstances prevent the application of ligatures at the seat of injury, the author remarked upon the advantages of a method of treatment which should have the advantage of checking the hæmorrhage without either severe local pressure or ligature of vessels remote from the wound; such advantages would seem to be afforded by the plan of flexing the forearm upon the arm with sufficient force to arrest the bleeding, and maintaining it in that position so long as may be necessary. The author related five cases of wound of the palmar arch, and one of wound of the forearm, which were thus treated, and all with success, save one, in which, however, the procedure was not had recourse to until a month after the accident. The merit of originating this mode of treatment was given to M. Durwell, by whom it was proposed in *L'Union Médicale*, tome iii., p. 341.

Mr. SPENCER WELLS had seen several gentlemen present trying to stop the pulse at the wrist, by flexing the forearm on the arm. He should like to know the result, as he had not succeeded in stopping the circulation in his own wrist.

Mr. ARNOTT remarked that the fact announced in the paper had been long known; the pulse, in many instances, could be arrested in the manner described; sometimes, however, it failed. He thought, however, the young gentleman who had sent the paper to the Society was entitled to its thanks for bringing before them any means of treatment in a very troublesome class of cases. A case of Mr. Skey's had been mentioned in the paper, in which the ulnar, radial, and brachial arteries had been all successively tied without arresting the hæmorrhage. Was there not in this case, however, disease of the coats of the artery? Mr. Arnett mentioned a case which had come under his care in University College Hospital, in which the wound in the palm had been received twelve days before the admission of the patient. The hæ-

morrhage had not ceased, and the house-surgeon tied the artery upon the spot; bleeding recurred: then pressure was applied, and subsequently the radial, ulnar, and brachial arteries secured. Only temporary benefit ensued. Mr. Arnott now applied ligatures in the palm, and thus happily succeeded in arresting the hæmorrhage. In some cases, the mode of treatment advocated by Mr. Giles was a good one; but it was desirable that a small solid compress should be applied over the wound, in addition to the flexion of the forearm on the arm. It was, however, very difficult in some cases to keep up this condition of flexion. It was not necessary, however, absolutely to arrest the flow of blood; if we interfered with the current, as was done in the treatment of aneurism by pressure, it would in some cases be sufficient. The treatment, however, in wounds of the palmar arch, must be adapted to the exigencies of the case.

Mr. CURLING remarked, that in addition to flexion, Mr. Giles had advised the employment of local pressure in these cases. Flexion would not always succeed in arresting the flow of blood, but by flexion he (Mr. Curling) could arrest the pulse at his own wrist. Usually, by this proceeding, the force of the circulation could be sufficiently diminished to do good. This mode of treatment was not applicable in all cases. An instance had lately occurred at the London Hospital, in which local pressure could not from some cause be fully employed, and the current of blood could not be sufficiently interrupted by forcible flexion. The humeral artery was consequently secured, and with success. Enough had been said to show the difficulties which surgeons occasionally encountered in cases of wounds of the palmar arch; and if the plan before them answered only in a few cases (though he himself believed it would succeed in most), it was a valuable accession to our surgical means of treatment.

ANTEFLEXION OF THE UTERUS CONSIDERED AS A NORMAL ANATOMICAL CONDITION. By J. H. Bennet, M.D., Physician Accoucheur to the Royal Free Hospital.

THE author's attention was attracted some years ago, during a series of investigations into the condition of the os internum during life, by the anatomical fact that the uterine cavities and the uterus itself, in women who have never borne children, are generally more or less anteflexed. He thinks it proved that this was misunderstood because stem-pessaries are invariably made perfectly straight, and anteflexion has been universally described as an abnormal or morbid condition. M. Huguier, however, published a memoir some years ago, describing anteflexion as an occasional congenital condition, but he described it as accidental and exceptional. The author's researches were begun with a view to determining the value of contraction of the os internum as a cause of sterility. He found that when the uterine sound met with resistance there, a small wax bougie could be passed, which, if allowed to re-

main for a minute or two in the uterus of a woman who had borne no children, presented when withdrawn a slight anterior curve. The same effect continues in some degree after one or more parturitions. This state can scarcely be recognised by digital examination under ordinary circumstances, but is readily perceived when decided, and may become very great in exceptional cases. The author then adverted to the observations of M. Boullard on this subject, who describes anteflexion as the natural anatomical direction of the uterus. He finds it most marked in the fœtus, less so in the child, and least in the adult; and that it ceases to be perceptible in most women who have borne children. The author thought that M. Boullard had rather exaggerated the degree of curvature. He next pointed out the pathological bearing of anteflexion, believing that it might be treated as a morbid state, especially if the uterus be enlarged by chronic inflammation, which would render the curvature more marked. He thought attempts to straighten the uterus likely to be injurious, and that no treatment ought to be employed except what might be necessary to relieve the congestion of the organ. He did not think it had any definite relation to irregular menstruation, but when both conditions were coincident the general health was much below par, and the anteflexion was commonly very decided.

Mr. J. Wood thought the cases referred to depended upon the degree of fulness or emptiness of the bladder and rectum. He had seen the peculiarity in question in the fœtus in utero, and in very young persons, and at such periods there appeared to be less curvature than in after life. He did not consider the curve a permanent one, but one which depended upon the varying conditions of the pelvic regions.

A CASE OF DISEASE OF THE HEART, WITH GREAT DILATATION OF THE ATRICLES. By W. O. Markham, M.D., F.R.C.P., Assistant-Physician to St. Mary's Hospital.

THE subject of the following history came under the observation of the author three days before his death. He was sixty-nine years of age, and had been subject to cough for forty years. Twenty-six years ago he suffered from dropsy, and his life even was despaired of, on account of the extent of the dropsical effusions. Fifteen years ago he was told that the dropsy, the spasms, the short breath and palpitations from which he suffered were the consequences of disease of the heart. These particulars showed that for about thirty years the patient had been the subject of organic disease of the heart. Of late years the symptoms of heart disease had increased; exertion of any kind was very difficult, and brought on severe spasmodic attacks. When first seen by Dr. Markham the last agony was manifestly near at hand. He could not lie down in bed; his breathing was laboured, his pulse rapid and irregular. The scrotum and legs were distended with serum. The

heart was felt beating with an extensive heaving impulse in the left lateral thoracic region, and also over the precordial region; the percussion sound over this region was extensively dull. At a point about one inch and a half from the right edge of the sternum, and in the fifth intercostal space, a pulsation, synchronous with the ventricular systole, was visible over a space of about three-quarters of an inch; it communicated a strong thrill to, and forcibly raised, the finger. The stethoscope transmitted a loud bruit when placed over it. It was evident that the heart was much enlarged, and that there was extensive valvular disease in this case. But what occasioned the pulsation here described? The thrill and the bruit naturally suggested the idea of an aneurism; but how could an aneurism exist at such a part, and apparently without any connexion with the heart or its great vessels? On the other hand, that the pulsation had no origin from the heart itself seemed indicated by the fact that the organ was felt beating in the left lateral region of the thorax. It was scarcely conceivable, indeed, under such circumstances, that any portion of the heart could occasion a pulsation so far away to the right edge of the sternum.

Necropsy.—On opening the thorax, the pericardium was found so distended as to reach across the chest, almost from side to side; its horizontal contrasted remarkably with its vertical diameter, and could not have been less than eleven or twelve inches. This enormous dilatation was caused by the dilated heart, and particularly by its auricles. On removing the organ, about three pints of blood, fluid and coagulated, escaped from its cavities. When the blood was wholly removed the heart fell together like a flabby membranous mass, having no traces of firmness in its texture. The right auricle occupied that portion of the chest, beneath the parietes, where the pulsation was felt; hence the pulsation, the thrill, and the bruit, took their origin within the right auricle. Both auricles were greatly dilated, especially the left, which measured sixteen inches in its widest circumference. The auricles also were reduced to the condition of mere membranous bags, no muscular tissue being perceptible in them, except in the appendix of the right. The right ventricle was dilated and hypertrophied; the left ventricle somewhat dilated; and the muscular tissue of both ventricles was in an advanced stage of fatty degeneration. The tricuspid opening was enlarged, but its valves were also enlarged and capable. The mitral opening was contracted into a hard narrow slit, about one inch long; the mitral valves being contracted, thickened, and united. The aortic valves were thickened but capable.

Remarks.—Such a pathological specimen rarely falls under the observation of the physician. That such deviations from a healthy condition of the heart are for a long period compatible with existence, is an interesting fact. The patient, it should be remarked, had both the means and strength of mind sufficient to subject himself to a rigid discipline in diet and exercise, experience

having taught him that great suffering resulted from the slightest deviation from the rules prescribed for his guidance. In physical diagnosis, Dr. Markham points out, that the case presents some special points of interest. It demonstrates, that a pulsation felt low in the right thorax, an inch and a half from the right edge of the sternum, may be cardiac, even though the heart be felt at the same time pulsating in the left thoracic region. Again, a heaving pulsation in this latter region does not always indicate hypertrophy of the left ventricle, for here it was nearly normal in size. The thrill, bruit, and pulsation arising in the right auricle are strange phenomena. How were they caused? They occurred during the auricular diastole, and probably had all three a like origin. It does not seem probable that they were produced by tricuspid regurgitation, for the tricuspid valves were large and sound, and the bruit, rough and loud, was not of the soft blowing kind. Thrill, again, over the right auricle, our best authors tell us, associated with tricuspid regurgitation, is unknown to them. These phenomena, then, may perhaps have had their origin in the rush of blood into the auricle from the venæ cavæ—a source of cardiac bruit not recognised in auscultation. The absence of muscular structure in the auricles proves that the force of the venous current is of itself sufficient to carry the blood on into the ventricles, unaided by any auricular contractions; and even when, as in this case, the circulation is impeded by a contracted mitral orifice. This case is very interesting, as showing the extraordinary degree of deviation, from its healthy state, of the heart, with which a long life is compatible, under certain conditions. It presents, in physical diagnosis, certain unwonted phenomena, little in unison with ordinary experience. It gives us a hint respecting the physiological action of the auricles; and it points out the value of medical art, in prolonging existence, when serious organic change has fallen upon a vital organ.

PATHOLOGICAL SOCIETY OF LONDON.

DR. WATSON, PRESIDENT.

Dr. GIBB exhibited a living child with

CONGENITAL EXTROVERSION OF THE BLADDER.

The infant was six weeks old, quite healthy and vigorous, and took the breast well. There was an absence of the anterior wall of the bladder, with a deficiency in the corresponding parts of the abdominal parietes, at which spot projected a flattened tumour, the size of a peach, at birth but now somewhat flattened and smaller, of a deep pink colour, instead of the blood red at birth. The mucous membrane was shiny, at the lower part of which were seen the orifices of the ureters, smaller than peas, giving exit to urine drop by drop, or in small streams, as the child

cried strongly. The penis was short, projected forwards from the sides of the pubes, which were widely separated, and the organ was irregularly developed, the open urethral canal remaining along its short dorsum. A fold of foreskin was situated beneath the glans. The testes were in the scrotum. The wide separation of the pelvic bones gave a peculiarly prominent and swollen appearance to each groin. By way of contrast, Dr. Gibb at the same time showed a drawing of this deformity in an adult, associated with congenital inguinal hernia; but differing from the child in there being an absence of any urethra at all, and also no umbilicus.

Dr. BRISTOWE asked, after the child was removed, if it had a navel, to which Dr. Gibb replied in the affirmative, and he mentioned there was an inflammation of the skin between the navel and tumour at birth, which subsequently disappeared.

Mr. LONSDALE showed a specimen of

TALIPES EQUINUS.

He was indebted to the kindness of Mr. Nunn, of the Middlesex Hospital, for the opportunity of showing the preparation. The points of interest in the specimen were, that it explained the cause of a difficulty that is sometimes met with in the treatment of this kind of deformity—viz, the inability to replace the astragalus into its normal position beneath the articular surface of the tibia. He had met with two cases of the kind. The difficulty would be found to be owing to the shortened condition of the ligaments, more particularly in the posterior part of the joint, bracing the tibia firmly down to the os calcis, and so not leaving room for the entrance of the displaced thick portion of the astragalus. The astragalus would also be found altered in shape, its head being bent downwards. The calcaneo-cuboid ligament was also shortened, drawing downwards the cuboid bone.

Dr. MURCHISON exhibited a specimen, showing

ABSCESS OF THE ABDOMINAL WALLS; CANCER OF THE STOMACH; AND COMMUNICATION BETWEEN THE STOMACH AND TRANSVERSE COLON.

There were three fistulous openings in the left hypochondriac and epigastric region. These passed into a sloughy cavity, large enough to hold an orange, and which communicated both with the stomach and transverse colon. The opening into the stomach was large, and situated near the pyloric extremity; that into the colon just admitted a crow-quill. In addition, there was a large mass of cancerous (scirrhous) deposit, at the pyloric extremity of the stomach, which almost completely obstructed the pyloric opening. The stomach, at this part, was firmly adherent to the arch of the colon, the mucous membrane of which, however, was not involved in the cancerous disease. The patient from whom this preparation had been obtained was a coachman, aged sixty-three, who was admitted into St. Mary's Hospital,

under the care of Mr. Ure, on the 11th of November, 1853, and who died on the 11th of the following December. His symptoms were briefly as follows: About a year before death, after the receipt of a blow upon the part, an abscess formed in the right hypochondriac and epigastric region. This was opened, and pure pus escaped. After some months, other two abscesses formed at the same place, which were also opened; and the three fistulous openings continued to discharge. Simultaneously with the abscesses, severe dyspeptic symptoms showed themselves, such as pain in the region of the stomach, increased after taking food, &c. These symptoms increased in severity: the patient became greatly emaciated, rapidly lost strength, and died exhausted. For three or four weeks before death, fetid air was repeatedly observed to escape from the fistulous openings in the abdominal wall; and ten days before death vomiting supervened, the vomited matters (as well as the matter given off by the fistulous openings) having a fecal odour, but not resembling feces in other respects. Dr. Murchison made some remarks on the rarity of the lesion which the preparation illustrated; in all the London museums there were only four examples of it, and he believed the total number of cases recorded did not much exceed twenty. Reference was also made to Dr. W. T. Gairdner's view as to the connexion between the occurrence of fecal vomiting in these cases, and the absence of obstructive disease of the pyloric extremity of the stomach.*

Mr. HAYNES WALTON exhibited a cast of a

VERY LARGE SPINA BIFIDA.

The patient, a man, aged thirty, never could stand, but crawled on hands and knees till six years old, when he took to crutches, and progressed by a swinging movement, one of the legs being always more or less dragged. At twelve years, in consequence of the increasing weight of his trunk, the crutches were laid aside, and he again crept. He was confined to the room, not being able to ascend or descend steps. Respecting his development, the head, chest, and arms correspond to those of a man about five feet six or eight inches high. Below the tumour, which is opposite the lower lumbar vertebrae, there is an arrest of growth, but not to a very great degree, and more in a want of bulk than length. The muscles are remarkably small. Five months ago he was taken to St. Mary's Hospital, because of retention of urine. It was found that the stoppage was due to the bladder being loaded with sabulous matter. Since then he has passed pus and alkaline urine, highly offensive, and an immense quantity of phosphatic material; nor has he been able to get the bowels moved without medicine, nor to sleep without narcotics. His appetite also is lost. He complains of a great dragging pain in the tumour. He is, in fact, sinking fast.

* Edinburgh Medical Journal, July, 1855, p. 81.

In answer to a question from Mr. W. ADAMS, Mr. WALTON said that the patient had some contraction of one of the toes, but there was no club-foot.

Mr. ADAMS said that club-foot existed in the majority of cases of spina bifida.

Dr. WILKS exhibited the following specimens :

1.—FIBROUS DEPOSIT IN THE SEPTUM VENTRICULORUM OF THE HEART, PRODUCING SUDDEN DEATH.

It was sent to him by Mr. Dolman, of the Derby Infirmary, with the following history :—A. B—, aged twenty-three, a cattle drover, whilst driving a beast at nine o'clock in the morning, in the streets of Derby, was seen to fall suddenly on his face ; he gasped two or three times, and expired. He was taken into the Infirmary, which was close by, and found to be quite dead. On post-mortem examination, all the organs were found healthy excepting the heart, and this presented a most remarkable form of disease, having a large tumor growing in the septum of the ventricles. It was very dense in structure, and creaked under the knife when cut. It could not be accurately defined, as the adventitious tissue was intimately mixed with the muscular fibre surrounding it ; but on grasping it with the hand, it could be felt as a tolerably round mass about the size of a billiard ball. It was covered with the serous membrane on each side, and projected more towards the right side than the left ; indeed there was a smaller nodule growing from it, which, protruding under the tricuspid valve, tended to close both the right auriculo-ventricular opening, and also the pulmonary. The latter must have been considerably encroached upon, and the impediment thus offered to the exit of the blood no doubt was the cause of the sudden cessation of the heart's action. The cavities were of normal size, and there was no appearance of there having been any inflammation of the organ. In the absence of all previous history, a conjecture only could be formed as to the nature of the case, and the cause of the remarkable growth. In fibrous degeneration of the muscular structure, from rheumatic myo-carditis or from chronic changes, the adventitious tissue might certainly be found in greater abundance in one part than another ; but in this case every other part of the heart was quite healthy, as well as the pericardium and endocardium. Besides the inflammatory origin of the disease, Dr. Wilks suggested another cause—constitutional syphilis. Such an explanation occurred to him on account of very similar tumours having been found in the muscles, and by himself in the liver and testes of those who had died with this disorder. The microscope showed the growth to consist of nuclei, nucleated fibres, and much amorphous, translucent, albuminous material. In some spots it was degenerating.

2.—RUPTURE OF THE HEART,

which was sent him (Dr. Wilks) by Mr. Hills, of the Kent County Lunatic Asylum. It was

taken from a man aged sixty-one, who had been an inmate of the institution twenty-four years, being afflicted with dementia. He was a muscular man, and enjoyed excellent health. On the 29th of March he took his meals as usual, and appeared quite well, and went to bed as usual. On the following morning the attendant found him dead, lying on his right side, with his hand under his head, in his ordinary sleeping position ; the bedclothes not disarranged, and not the slightest appearance of there having been any struggle. Upon post-mortem examination, the pericardium was found distended with coagulum, which had escaped from a rupture of the left ventricle of the heart. The laceration was in front, nearly transverse, and about three-quarters of an inch in length, and situated about one inch and a half above the apex. The heart was surrounded with fat, which had encroached very much upon the walls of the ventricles, and the neighbouring muscular tissue was very fatty. The coronary arteries were excessively diseased, particularly the anterior, which formed a bony tube at its upper part, and at its lower part was occupied by masses of fibrin, which were entangled in its diseased coats, and were rapidly softening.

In contrast to these two cases, Dr. WILKS also showed a heart which had been removed that day from an old man who died suddenly in his bed in Guy's Hospital. This was very fatty, and presented the ordinary senile changes, but was not ruptured, death being caused, as is most usually the case, from mere cessation of the heart's action.

Dr. BRISTOWE inquired whether the fatty degeneration was more marked at the point of rupture than at other parts ?

Dr. WILKS replied that there was more fat at the point at which rupture took place than elsewhere.

Mr. T. BRYANT exhibited the following specimens :—

1.—POLYPUS OF THE RECTUM.

Edmund G—, aged five years, came under his observation on March 23rd amongst the out-patients of Guy's Hospital, having experienced constant bleeding from the anus for three weeks previously, unaccompanied by pain, and, although frequently examined by his mother, without any visible cause. On examining the patient, the buttocks were found smeared with blood, and projecting from the anus a small polypus, the size of a horsebean, was detected, this having but just come down. It was excessively vascular and congested, and had a neck about three-quarters of an inch long, connected with the bowel within the sphincter. As the boy was an out-patient, Mr. Bryant applied a ligature to the base, to prevent all chance of bleeding, and having done so, the sphincter contracted and expelled the polypus. When seen three days after, the boy was quite well. Upon examining the growth microscopically, it presented the usual appearance of a fibro-cellular structure.

2.—IMPACTED FRACTURE OF THE NECK OF THE THIGH-BONE.

This specimen was sent to Mr. Bryant by his friend, Mr. W. Hills, of the Kent County Lunatic Asylum, with the following history:—Ann C—, aged sixty-six, on February 16th, 1853, fell accidentally in the ward, and injured her right hip. There was about an inch and a half shortening, which could not be diminished by extension, and no crepitus, leading the surgeon to believe that a dislocation was the form of injury. The limb was put up on a long splint, and the patient confined to bed for six weeks; subsequently she gradually regained strength in the limb, and was able to walk without assistance. The shortening, however, still persisted. On July 30th, 1854, seventeen months after the accident, she died from acute bronchitis. This specimen was a good example of the impacted fracture of the neck of the thigh-bone, so well described by Mr. Smith, of Dublin. The neck has evidently been driven into the bone for more than one inch, the direction of the cancelli of the bone indicating the extent. The major trochanter, as is usual, was also fractured. The symptoms during life clearly pointed to the character of the injury, which the specimen well demonstrated.

Mr. HULKE exhibited a specimen of

MALIGNANT DISEASE OF THE EYEBALL.

This eye had been removed by Mr. Bowman, in the Royal London Ophthalmic Hospital, on the previous Tuesday. The patient was a female aged thirty-two. The lens and humours being clear, a vascular growth could be seen in the bottom of the eye. With the ophthalmoscope the vessels of the retina could be distinguished by this arrangement, and arborization from those of the morbid growth, which were larger, and emerged at various points on its surface. After removal, the encephaloid growth was found to fill the back of the globe. It had been developed in the choroid, and had split it into two layers, by which it was inclosed. The retina was carried forwards on the anterior surface of the tumour. The minute structure was that of encephaloid cancer, approaching in parts to a melanotic type. In this case the presence and arrangement of the vessels, as seen with the ophthalmoscope, clearly indicated the nature of the disease and its exact position.

Mr. ADAMS inquired whether the arrangement of the vessels was sufficient to diagnose that the disease was malignant?

Mr. HULKE replied that the arrangement of the vessels alone was not sufficient upon which to found an opinion; but if the disease had been strumous, no vessels would have been observable. This fact conjoined with the other symptoms made the diagnosis clear.

Mr. FLOWER exhibited a specimen of

OSSEOUS DEPOSITS IN THE DURA MATER.

There were several large particles of bone in various parts of the dura mater. The woman died

from cancer of the liver. There were no symptoms of disease within the cranium.

Dr. BUCHANAN showed a specimen of

MALFORMED HEART.

The patient, a boy, died at the age of four. He had been cyanotic more or less ever since birth; was always very weakly, and could scarcely walk; fingers and toes greatly clubbed. There was loud basic systolic murmur during life transmitted freely in all directions. Death occurred, after he had suffered a week, from jaundice. After death, on examining the heart, an aperture was found at the base of the septum ventriculorum, admitting the little finger, in such a position that the aorta arose from both ventricles about equally; and the pulmonary artery from the left ventricle was about half its natural calibre. The ductus arteriosus was obliterated; the foramen ovale patent. The two ventricles were of nearly equal size, and both of considerable thickness.

ACCUMULATION OF MUCUS IN THE TYMPANUM.

Mr. HINTON presented the petrous bones of a male child, aged nineteen months, who died on the 26th of March, after a convulsive attack of twelve hours' duration. The history could not be very clearly ascertained; but it appears that about Christmas, while in the country, he had an attack of pain in the ears, which caused him to cry a good deal for two or three days. This was followed by a discharge from the right ear, which, however, soon subsided. Since that time he had been in the habit of putting his hands to and rubbing his ears, but had not seemed to be in pain, nor had he been noticed to be deaf. About ten days before his death he became poorly, with cough and restlessness, and at first some tendency to vomit; but he was not supposed to be seriously ill, nor was medical attendance obtained for him. On the day before his death, he seemed better, and was taken out, but was suddenly seized with convulsions in the evening.—On the post-mortem examination, thirty-six hours after death, the sinuses of the dura mater were found full of blood, and the arachnoid of a pinkish colour. The brain was very firm; there was no unusual amount of fluid in the ventricles. In the situation of the olivary bodies there appeared to be a small point of extravasation of blood, with slight softening of the nervous substance around it; the bronchial mucous membrane was reddened, and the tubes contained a little mucus; the right side of the heart contained some decolorized clots. The cavity of the tympanum on each side was filled with a tenacious semi-fluid substance, which did not escape by the Eustachian tubes; the mucous membrane was red, and very much thickened; and the bone forming the wall of the tympanum easily separated from it, so that portions of the bone might be removed, leaving the membrane still bounding the cavity. The membrana tympani are opaque, more concave than natural, and present the peculiar mottled appearance characteristic of a thickened and congested condition of

the mucous layer as seen through the external laminae of the membrane, which, being comparatively free from disease, retain nearly their normal transparency; the labyrinth is healthy. The case forms one of a series in which inflammatory action has been found in the tympanum, in children who have succumbed to convulsive disease.

Dr. SALTER exhibited the

HUMERUS AND FEMUR OF A CHILD,

in whom six of the long bones—the left humerus, the left tibia and fibula, the right femur, and the right radius and ulna—were fractured, without any violence or accident, and apparently from degeneration of the structure of the bone at the part fractured. The child, two years and a half old, had been brought amongst the out-patients to Charing-cross Hospital three or four days before, powerless, and evidently in great agony, uttering constant piercing cries. The cartilages of its nose had ulcerated away, leaving instead of the nose a hole occupied by a scab, and imparting to the face the syphilitic aspect. The cartilages of the ears, too, and part of the external meatus, were also ulcerated away, both sides alike. From the head of the elbow of the left arm matter, watery and fetid, was running freely. The seats of the other fractures were hard, swollen, and light, as if there was matter deeply pent up, but there was no discharge. The child died the next day. At the post-mortem, all these fractures were verified; they were nearly transverse; the bone did not seem diseased, except in the immediate vicinity of the fracture; but none of the bones seemed to have a perfectly normal hardness and density. At and near the points of fracture, the periosteum was thickened, and detached from the bone. There was no history of syphilis, and of struma only very remotely. All the joints were healthy. Dr. Salter had been able to get only a very imperfect history of the case, but he promised at a future meeting to make it more complete, and to supply a particular account of the textural condition of the diseased parts.

Mr. HUTCHINSON inquired if the child had suffered from congenital syphilis. He had seen a case somewhat similar, connected with syphilis, in which, however, there was a large node round the seat of the fracture. Was there reason to suppose that the syphilitic taint had been communicated by vaccination?

Dr. HYDE SALTER believed, from the history of the case, both parents being healthy country people, that the symptoms were not dependent on syphilis.

Dr. WATSON said that the history of the case told as much against the strumous as the syphilitic nature of the disease.

Dr. HAWKESLEY inquired if the child had taken mercury to any extent. He had seen a case of less severity, in which mercury appeared to have been the cause.

Dr. HYDE SALTER replied that the child had not taken mercury at all, except a little within the last three or four months.

Dr. OGIER WARD had seen a case of blind boil in a strumous constitution, connected with disease of the bones, similar in some respects to Dr. Salter's case.

In reply to a question from the PRESIDENT, Mr. HUTCHINSON remarked, that no satisfactory case, in which the transmission of syphilis by vaccination could be proved, had been published.

Mr. COOPER FORSTER showed a specimen of

RUPTURE OF THE AORTA.

The patient was a man who had been knocked down in the street by an omnibus, and had died five minutes afterwards from hæmorrhage. On examination the aorta was found ruptured opposite the fourth lumbar vertebra. This vertebra was fractured; but there was no other injury, except that there was a second opening in the aorta which extended only through two of its coats. There were no external marks of injury, except a bruise over the crest of the ilium.

Dr. VAN DER BYL exhibited the following:

1.—A LOOSE BODY FOUND IN THE PERITONEAL CAVITY.

It was almond-shaped, about half an inch long, and at one extremity presented a minute projection, which was probably the remains of the pedicle by which it was originally fixed. The external surface was smooth and shining. On section, this body was found to consist of a firm semi-cartilaginous capsule, filled with yellow fatty material, containing some gritty nodules. On microscopic examination the contents were found to consist of fatty granules, and some irregular hard (mineral) masses requiring hydrochloric acid for their solution. This loose body was found in the pelvic cavity of a female subject. On examining the colon, one of the appendices epiploicæ attached to the sigmoid flexure was found much altered in structure, resembling, in fact, the body just described; and it was attached by a very small pedicle, so slender, indeed, that a very small force would doubtless soon have detached it. There could therefore be little doubt but that the body just described had resulted from a degeneration and separation of one of the appendices epiploicæ.

2.—SPECIMENS ILLUSTRATING THE FORMATION OF LOOSE BODIES IN THE ABDOMINAL CAVITY.

These specimens were found in a male subject, and consisted of two of the appendices epiploicæ attached to the transverse colon. They were both much altered in structure, about three-fourths of an inch in length, slightly flattened and furnished with very slender pedicles. The one was very firm, and presented a semi-cartilaginous consistence; the other was dark-coloured, and appeared to contain blood. It was quite possible that, owing to the constriction of the pedicle, a vessel had burst; and that accident might perhaps have aided the degeneration of the fatty appendix. In vol. vi. of the "Transactions of the Pathological Society" Dr. Van der

Byl has described a loose body found in the peritoneal cavity, which he believed was formed in the manner he had just endeavoured to prove. In connexion with this subject, Dr. Van der Byl alluded to the loose body removed from the hernial sac by Mr. Shaw; and stated that in *THE LANCET* for 1850, there was described "a large concretion lying loosely in a hernial sac," which was exhibited at the Westminster Medical Society by Mr. Canton, and which exactly resembled that exhibited by Mr. Shaw.

A CASE OF EXPECTORATION OF MEMBRANES, AND ANOTHER OF FIBRINOUS CASTS OF THE BRONCHI.

Dr. LEARED exhibited membranes, some of them of considerable size and of a white colour, that had been expectorated by a woman aged forty. She had also several times expectorated bright yellow matters, very closely resembling orange jelly. She was in perfect health, when, from the passage of some crumbs of bread into the left primary bronchus, as it would appear, inflammation of the corresponding lung ensued. This was followed by the expectoration described. The membranes were laminated in a manner closely resembling hydatid cysts, but no traces of echinococci were discovered. Some remarkable microscopic appearances, however, presented themselves. Between the layers of the membranes were multitudes of dark-brown bodies, often arranged in a remarkable branching manner. By repeated microscopic examinations Dr. Leared ascertained the mode of formation of these appearances. Bodies resembling concentrically-arranged cells, and of sizes varying from that of a blood-corpuscle to many times larger, were discovered. They presented every stage of growth and decadence. In some, the concentric layers were quite perfect; in others, splitting of the external layer could be just discerned; in others, again, the splitting had occurred in such a manner as to afford a close resemblance to the Maltese cross; whilst some had entirely broken up, and, the component parts having been scattered, occasioned the branching appearances before referred to. It was remarkable that fragments of the disrupted bodies appeared to have been acted on by a centrifugal force. The orange-jelly-like matter was found under the microscope to consist of fine transparent membranes folded together, and coloured by bright yellow bodies upon them. Dr. Leared believed the metamorphosis of effused blood to have been the source of all the bodies described. Drawings of the several appearances were shown. After the orange-jelly-like and white membranous expectoration had continued several months, the patient finally got rid of it, as it appeared, from the effect of a mercurial course.

Dr. Leared also showed some fibrinous casts of the bronchi from a young man suffering from phthisis. They were branched and of small size.

Mr. HENRY exhibited a

FIBRO-PLASTIC TUMOUR,

which he had removed from beneath the angle of

the right lower jaw of a boy, aged sixteen. It has been growing slowly, but uniformly, for four years; had occasioned little if any pain, and had been treated in the country with the external application of iodine for a great length of time. The tumour was of about the size of a large walnut, rough, and lobulated externally, extremely dense, and at one lower nipple-like portion, as hard as cartilage. It was loose and movable, and easily extirpated, its connexions with the great vessels of the neck being cellular. On section, it exhibited a dense, opaque-looking structure, contained in a capsule; and in its interior were evident marks of former cyst. Its basis was fibro-plastic, made up of fibre cells and connective tissue in different stages of development, and also exhibited traces of imperfectly-formed gland tissue. The lower portion contained some true cartilage, associated with the fibrous tissue; and it would seem to have been one of those fibro-glandular tumours in which cartilage may eventually be developed, but which are certainly distinct from the true choroid tumour which forms in connexion with bone.

HARVEIAN SOCIETY.

MR. ALEXANDER URE, PRESIDENT.

Mr. URE communicated a paper on

EXCISION OF THE HEAD OF THE THIGH-BONE.

He considered that morbus coxarius, or hip-disease, commenced, in the majority of instances, in the head of the thigh-bone. Its origin is inflammatory, and may be commonly traced to a fall upon the great trochanter, or other hurt in that situation. It is usually met with in individuals below the age of puberty, whose system is under the influence of a scrofulous or tuberculous taint; it may also result from rheumatism. Inflammation, as primitively developed in the articular end of a long bone, is characterized by infiltration of a reddish fluid into the osseous cells, enlargement of these cells, swelling of the bone, increased vascularity, and injection of the periosteal vessels. As it advances, pus is formed, sometimes tubercle, and infiltrated into the bony texture; this is followed by caries, and occasionally necrosis, with detachment of sequestra. While these changes are going on, the adjunct structures connected with the joint become implicated; hence it is sometimes difficult to determine in which structure the disease originated. As a general rule, however, laid down by Rokitsansky, ("Pathological Anatomy," vol. iii, p. 293,) "That structure was the first diseased, in which the inflammation and destructive process are most advanced." Of course inflammation proceeds more slowly in bone than in the softer tissues. The osteitis, upon which the form of hip-disease under consideration depends, may subside, and the patient recover without deformity—a result met with mostly in children. It may proceed further, and the patient still recover with an

anchylosed joint, with or without displacement of the thigh-bone; or it may prove fatal through profuse suppuration, with extensive caries of the bone, and destruction of the different structures composing the joint. The patient, after a long and painful illness, succumbs through constitutional irritation. Where ankylosis ensues without displacement, it will be found that the head and neck of the thigh-bone have been removed to a greater or less extent by interstitial absorption, and that the elements of fibrous or ligamentous tissue in the vicinity coalesce, so as to bring the remaining portion of the neck into relation with the hollow or confines of the acetabulum; where it is attended with displacement, the head of the bone is commonly lodged in the external iliac fossa: in some rare instances, in the foramen ovale. In the former condition, the limb is shortened and rotated inwards; in the latter, it is abducted, lengthened, and rotated outwards. In the advanced stage of the disease, where there is no prospect of a cure being accomplished, where the patient is progressively losing flesh and strength, harrassed by the repeated formation of collections of matter in the vicinity of the joint, and by continued pain, aggravated on the slightest movement, so that death must ere long close the scene, the surgeon is surely justified in resorting to such means as may afford a reasonable ground of averting the fatal issue. By removing, then, the head and neck of the thigh-bone, when these are extensively carious, he simply imitates what Nature occasionally effects by the so-called process of interstitial absorption. But it may be contended, that, by this procedure, he only gets rid of a part of the disease, and leaves behind a carious acetabulum. It cannot be denied that instances occur, in which the whole cotyloid cavity has undergone erosion, but more frequently the caries is confined to the upper and back part of the cavity, and can be gouged out. Even supposing the whole cavity to be affected, it is plain that the removal of the head and neck of the bone will obviate the painful friction of the morbid and sensitive surfaces, when there is still some cartilage remaining, and thus abate a great source of irritation to the patient, and favour the chance of cure. The recent interesting case, recorded by Mr. Hancock, proves that a diseased acetabulum is no bar to the success of the operation. The subjoined instance is adduced in corroboration of the views above laid down. A puny emaciated boy, of scrofulous habit of body, five years of age, was admitted into St. Mary's Hospital, under the care of Mr. Ure, on the 1st of August, 1856. He had been suffering from hip-disease for three preceding years. Over the right trochanter was an unhealthy-looking ulcerated aperture, the size of a florin. A probe, when introduced, could be passed down the thigh for several inches, and also in the direction of the ischium. The sinuous cavity contained coagulated flaky substance, and on slight pressure blood mixed with pus issued. Very offensive purulent matter was also discharged from the anus. On

passing the finger into the rectum, a round and smooth opening was detected, a little above the sphincter. This was capable of admitting the point of the fore-finger, and communicated with the opening adjoining the trochanter. The boy had an anxious suffering look; he lay constantly upon his left side, with the right thigh bent on the pelvis, and the leg bent on the thigh, as is seen in the advanced stage of hip-disease. On the 4th of August, the boy was rendered insensible by chloroform, and a careful exploration made, to ascertain, as far as possible, the extent of the malady, and remove any loose bone which might be present; several sinuses were accordingly laid freely open, including that which communicated with the gut; a few small bleeding vessels were secured by ligature, and wet lint applied as a dressing. He had wine daily, and also cod-liver oil, together with nourishing diet. He improved for a short time, and could straighten the limb more than previously, but ere long he relapsed into his former condition, and was taken home by his parents towards the end of autumn.

On the 1st of January, he was re-admitted in a far worse condition than when he left. The tedious and painful malady had gone on from bad to worse, and was manifestly approaching the last stage of all. The skin covering the hip-joint was pale, attenuated, and traversed by blue distended veins. There were several circuitous sinuses, which led to diseased bone, in the situation of the head of the femur and the tuberosity of the ischium; from these matter was copiously discharged. The boy had a wan and withered look, was much wasted, complained of pain referred to the patella, and dreaded the slightest movement on account of pain in the hip-joint. He had a feeble pulse, never under 130, and all the signs of hectic irritation. As the boy seemed in a very hopeless state, and as it might be fairly inferred that the head of the thigh-bone was but loosely if at all, connected with the cotyloid cavity, through rupture of the ligaments, Mr. Ure with the sanction of his colleagues, determined to perform excision of the head of the bone. This was accordingly done on Feb. 11th, 1857, the boy having been previously rendered insensible by chloroform. He made a curvilinear incision, about three inches and a half in length, the concavity being directed downwards and forwards, skirting along the upper and posterior border of the great trochanter, keeping clear of the sciatic nerve. He then divided the soft parts covering the head of the bone, which was immediately exposed, and though not displaced, was unattached, in the cavity, the capsular ligament and round ligament having been destroyed. Having isolated with the finger, the head and neck of the bone, he divided the latter, close to the trochanter, with cutting-pliers. He then gouged out some carious bone from the base of the trochanter, as also from the upper and back part of the acetabulum. The edges of the wound were held together by means of sutures, and a fold of wet lint applied. Little more than a teaspoonful

of blood was lost during the operation. The portion of bone removed was of a deep red colour, soft, porous, thoroughly carious; of the incrusting cartilage very little remained.

Feb. 12th.—He had been rather restless during the night, but took his food well, and two ounces of wine; there was no complaint of pain; the countenance was pallid; the pulse 130; the bowels had been moved. In the course of a couple of days, the wine was increased to three ounces; his appetite being deficient, citrate of iron with quina was exhibited. Before long, he was able to take plenty of food, consisting of mutton-chop, milk, eggs, and the like, and his health improved rapidly. For the first fortnight, the thigh was kept slightly bent and abducted by means of a pillow, in order to bring the upper end of the bone in relation with the acetabulum. On the 16th of March, a small fragment of dead bone separated; the wound had cicatrized, with the exception of the upper angle; and all the sinuses had closed save one over the tuberosity of the ischium.

March 17th.—The boy was dressed, and sat in an easy chair; he got out of bed unassisted.

30th.—He was able to move about the ward with comfort, on crutches; he could bend the thigh with the pelvis fixed; the limb was shortened about an inch and a half; this, however, did not prevent his putting the heel to the ground, when told to do so, in walking. The purulent discharge did not amount to more daily than would cover a shilling. Since the date of the operation, the boy has progressively gained flesh and strength, his countenance has become cheerful, indeed the amendment in all respects is very remarkable.

In the discussion which ensued, Dr. Ramsbottom, Mr. H. Smith, Mr. H. Walton, Mr. B. Norman, and Mr. Webster took part.

MEDICAL SOCIETY OF LONDON.

MR. HIRD, PRESIDENT.

MR. I. B. BROWN related a case of

OVARIAN DROPSY TREATED BY IODINE INJECTION.

J. S—, aged forty, was admitted into Boynton ward on the 5th of March, 1857, under his care. When eighteen years old she perceived her abdomen to become more swollen, (but without pain,) which gradually increased until she was twenty-five, when she was tapped, and between seven and eight quarts of clear fluid taken away. It has since then gradually filled, and produces great uneasiness by its pressure. General health good. On the 11th of March, at two p.m., he (Mr. Brown) tapped in the semilunar line, and drew off sixteen pints and a half of straw-coloured fluid, slightly albuminous. He then injected six ounces of the Edinburgh tincture of iodine into the cyst; it caused no pain. At half-past eight the same day, iodine was found in the vomited matter, and large quantities in the urine. On the 12th she was very sick and prostrate, and was

ordered to take stimulants freely. On the 13th she passed a restless night. From this period she gradually recovered, without any untoward symptom, and left the hospital quite well, and daily gaining strength.

Dr. GIBB had seen five cases in which the iodine injection had been used. In three instances it was successful; one had died from peritonitis, and the other was sinking. In all the five cases the tincture of iodine of the Edinburgh pharmacopœia had been used.

Mr. I. B. BROWN narrated a case of

RECTO-VAGINAL FISTULA WITH PROLAPSUS OF THE UTERUS—TWELVE MONTHS' DURATION; BOTH CURED BY ONE OPERATION.

M. S—, aged thirty, was admitted into St. Mary's Hospital on March 20th, 1857. She was taken in labour with her first child on March 4th, 1856. Three days afterwards she had a dose of castor oil, and for a month afterwards she had no control over her evacuations. Whenever her motions passed, a portion came through the vagina. Three weeks after her labour the uterus came down occasionally; it was as large as the fist. Menstruation quite regular. Soon afterwards the uterus always protruded on the erect posture. On examination the os uteri was found protruded between the labiæ, and a fistulous opening, admitting the end of the little finger, on the posterior wall of the vagina, communicating with the rectum. The perinæum had been ruptured up to and through the superficial fibres of the sphincter as the mark of the cicatrix was very visible. On the 25th of March Mr. Brown freely denuded the two sides of the vagina, taking especial care to remove the mucous membrane beyond the fistula, and then passing a bistoury through the anus and recto-vaginal opening, he divided the septum so as to make the whole into one. The parts were then brought together with the deep and superficial sutures, and the sphincter divided, as usual in ruptured perinæum. On examination, on the 16th of April, it was found that the parts were beautifully united.

Dr. GIBBON read a paper

ON THE IDENTITY OF THE SPECIFIC CAUSES OF TYPHUS AND TYPHOID FEVER.

The object of the paper was to apply certain tests as to the truth of the two forms of continued fever met with in this country. The author looked upon the so-called "relapsing fever" as a remittent or malarious disease—1st, on account of the periodicity of its symptoms; 2ndly, from the effect of quinine in promoting its cure. After graphically pointing out the obvious distinctions of the typhous and typhoid varieties of continued fever, Dr. Gibbon contended that the contrast, marked as it was in the course, symptoms, and lesions of the two diseases, would not warrant them in concluding that each distemper had its own peculiar and distinct exciting cause. The futility of inferring a specific difference in the nature or cause of a disease from a diversity

in the character of symptoms and lesions was illustrated by the fact that secondary syphilis and scarlatina frequently manifested themselves in different patients by eruptions, symptoms, and anatomical lesions of the most diverse description. The author thought that to some minds presumptive evidence of the non-identity of the two kinds of fever had been derived from the assumed close analogy that their exciting causes have to that of measles, scarlatina, and small-pox. It was argued that because measles and scarlet fever were prior to Dr. Wethering's essay confounded together as one and the same disorder, therefore it was possible, and even probable, that before Dr. Jenner's essay, typhus and typhoid were looked upon as varieties of one disease, whereas they were specifically distinct. This presumption was erroneous, from the fact that the two classes of disease were not exactly analogous in their exciting cause, as they undoubtedly were in their seat, symptoms, and course; for scarlet fever and measles were known only to be propagated by personal infection, whereas continued fever was generated spontaneously as well as by personal infection. The only method of settling this important question is that so ably carried out by Dr. Jenner—i. e., the effect of the exposure of healthy individuals to the typhus and typhoid poisons; and if each is found invariably to generate only its own variety of continued fever and not the other; we must conclude that they are generically distinct. As the causation of continued fever was a matter beset with so many fallacies and difficulties, the author contended that Dr. Jenner's 87 outbreaks of continued fever, containing as they did one notable exception to the theory, were far too few to enable a cautious reasoner to decide against the identity of the two maladies.

To apply the test of experiment to the Jennerian doctrine, a great and fair one was narrated as having taken place in the British Civil Hospital at Smyrna in 1855. Early in February of that year, in consequence of the infected state of the hospitals at Scutari, 800 sick and wounded soldiers were sent down from the Crimea to Smyrna. At the time of embarkation none of these men had continued fever, but suffered from diarrhoea, dysentery, frost-bite, &c. In consequence of official mismanagement these men could not be landed from the crowded "transports" until several days after their arrival in the bay of Smyrna. Typhus of a very virulent type broke out; several men died of it, and on February 17th, 1855, 79 soldiers suffering from it were disembarked. In the spacious wards and well-ventilated corridors of the barracks that had been fitted up as an hospital this fever spread from bed to bed throughout the entire establishment. In every instance in which the Crimean soldiers were affected, the disease assumed the genuine typhus character. In Dr. Gibbon's division, which the medical council, with the hope, vain as it proved, of arresting the spread of the disease, at first set apart for the reception of all fever cases, 84 men passed through the disease during the first three months, only 4 of whom

had the typhoid variety of the fever, and these men were attendants, not soldiers, in the Crimean army. The author was credibly informed, both by the military and the civilian medical officers, that in all cases where the soldiers were affected, the disease was of the genuine inoculated typhus character. To attend upon these sick soldiers there sailed from England about the same time, 47 Chatham orderlies, 48 civilian orderlies, 22 female nurses, 7 laundry women, 16 lady nurses, 4 dispensers of medicine, and 25 medical officers. What was the result of the direct exposure of these officers to so genuine an epidemic of typhus? The typhus and typhoid continued fever, as we have them in this country, are unknown to the medical practitioners at Smyrna. The disease they call typhus affects, and is very fatal to young children, and from what I saw of it, it appeared to resemble the infantile remittent of this country. The hospital attendants on their arrival were, I believe, in perfect health; certainly none of them had continued fever. I would submit to this Society that if Jenner's theory be true, every one of these attendants who contracted the disease, ought to have had typhus, whereas during the first eight weeks, out of the 47 Chatham orderlies, 22 were attacked with the epidemic. I myself attended three of them; they had the "rose-spot" eruption, the diarrhoea, and other general symptoms which are so characteristic of typhoid fever. Of the 48 civilians, 2 contracted fever, one of whom I know to have had typhoid fever, as well from the symptoms I noted during life, as from the extensive ulceration of Peyer's glands I found in the ilium after death. Of the 22 nurses, 7 were attacked, one of whom I saw during life, and examined after death. She had typhus complicated with meningitis. Of the 4 dispensers of medicine, 3 were attacked with typhoid fever, the diagnosis in all three cases I myself verified. One died, and extensive ulceration of the ilium was found at the post-mortem examination. Of 25 medical officers, one had genuine typhoid fever, which clearly originated by personal infection. The details of some of these cases were published in a medical journal in August, 1855, for the purpose of illustrating the treatment of the complications of continued fever. The author thought this experiment open to fewer sources of error than any he had witnessed in this country. Another test applied to this doctrine of fever was by pointing out that it was inconsistent with other facts and well-established truths. For instance, the fact that while there were some cities, as London, where the two forms of continued fever were equally prevalent, there were other cities, as Dublin and Glasgow, Paris and Vienna, where only one form of disease, typhus or typhoid, was found. Again, this doctrine of non-identity was inconsistent with the fact, that in localities where both forms were met with, the epidemics consisted of each variety of continued fever. Again, were the diseases totally different, the cases in which sequence of the two was immediate ought to have been more commonly met with, for patients with either disease

were often together in the same fever wards and hospitals. The author had never witnessed a case in which a convalescent from one disease had contracted the other, and he believed such cases to be exceedingly rare. One such case is recorded by Dr. Peacock, but as no details of the first fever are given, it being merely stated that it was "regarded as one typhoid," and as it is the only case I have read of, I think little, if any, weight should be attached to it. Dr. Gibbon lastly applied Lord Bacon's test of truth,—"Truth is fruitful, but Falsehood is barren," and contended that while other great medical truths, as the discovery of chloroform, the discrimination between measles and scarlet fever, the recognition of all the varieties of secondary syphilis, &c., had borne immediate and most precious fruit; the doctrine of non-identity in continued fever had as yet produced no good result, not even the segregation of the cases in our fever wards and hospitals. Whatever good had resulted from the labours of Louis, Chomel, Stewart, and Jenner, was due to the recognition of the diseases as varieties of the same, not as different species of disease. The author deprecated hasty generalizations from a few instances, and concluded by remarking, that until the non-identity was clearly and conclusively established, practitioners would do well to look upon the two diseases as their names implied, typhus and typhoid, as varieties of one essential fever.

A discussion ensued, in which Dr. Ryan, Dr. Semple, Dr. Andrew Clark, Dr. Camps, Mr. Dendy, Dr. Rogers, and Dr. Wiltshire took part. It was contended by a majority of the speakers that the distinct characters of typhus and typhoid fever had been clearly proved by the observations of Dr. Jenner. The result had been not only sufficient to aid us in our diagnosis, but also in the treatment of the two diseases. The question in some respects might appear to be still *sub judice*, but all experience tended to the conclusion that the symptoms observed were characteristic of two distinct forms of fever, differing in their nature, their symptoms, their causes, and their treatment.

WESTERN MEDICAL AND SURGICAL SOCIETY.

MR. LANE, PRESIDENT.

DR. FINCHAM related

A CASE IN WHICH SYMPTOMS OF ULCERATION OF THE LARGE INTESTINE WERE FOLLOWED BY SWELLING OF BOTH INFERIOR EXTREMITIES, AND PERMANENT OBSTRUCTION, APPARENTLY, OF BOTH COMMON ILIAC VEINS.

The patient, aged fifteen, came under Dr. Fincham's care on May 14th, 1856. He was very anæmic, with a soft, weak pulse, 120, but his appetite was good, and his skin of natural warmth; the urine was natural. He complained of diarrhoea, the motions being relaxed and bloody, with much pain at the extremity of the gut on going

to stool and during defecation. Some pain also existed in the hypogastric and left inguinal regions, though the abdomen generally was soft and yielding. The rectum was examined by finger and by speculum, without detecting anything; the motions were, however, very slimy, offensive, and bloody. The symptoms yielded to treatment, and upon their return he was re-admitted into Westminster Hospital. The frequency and the nature of the evacuations were now improved, but blood was still passed. On July 4th, without any rigor, he complained of pain about the right knee, the soft parts about being swollen and œdematous. On the 5th the swelling, though less, had extended up the thigh. On the 7th there was pain, increased by pressure, over the iliac and inguinal regions, the pain extending a short distance down the inner aspect of the thigh; there was fulness though no hardness in these parts. On the 10th there was œdema of the right foot. On the 16th the pain diminished, and the general swelling was reduced, but on the next day both symptoms were aggravated; the right thigh and the inguinal region had become very painful and swollen, and the superficial veins distended. Though the pain was very severe, there was no fever nor constitutional symptoms. On the 18th, the superficial veins over the whole abdomen, as well as those on both of the lower extremities, became considerably distended. On the 23rd, the parts affected remained œdematous, with the scrotum, until the middle of August, when it disappeared; the superficial veins, however, never diminishing to any notable degree. He was discharged towards the end of September, when his condition was as follows:—There was great enlargement of both internal saphena veins; the abdomen and the flanks were covered with a network of vessels manifestly consisting of enlarged and tortuous branches of the epigastric and circumflex iliac veins, through which, as was evident on pressing them, the blood flowed in an upward current. This network of veins inosculated with the mammary vein, enlarged branches of which were visible on the chest; by this channel, and through the intercostals (probably), the blood was returned to the heart. This state of things existed on Dec. 30th, when he was last seen.

In commenting upon the pathology of the case, the author adopted Dr. Lee's views, and considered the phenomena above narrated to be due to absorption of pus or some other morbid fluid from the mucous surface of the lower portion of the large intestine, in which ulceration had doubtless existed, he considered that by means of the hæmorrhoidal veins it was quite possible for morbid matter to find its way into the large venous trunks, and he fortified his view by referring to cases on record, in which painful swelling of the lower limbs, with symptoms of venous obstruction, was found co-existent with ulceration of the mucous membrane of the colon and rectum. He referred to the "Medico-Chirurgical Transactions," (16th volume) in which are

recorded two cases of phthisis, in which ulceration of the large intestine had apparently caused symptoms similar to phlegmasia dolens; he mentioned also other similar cases, though they were not verified by post-mortem revelations. He therefore considered absorption of morbid matters from the colon or rectum to be the primary cause of the symptoms of venous obstruction in the case narrated, and that the tendency to coagulation was increased by the anæmic condition of the patient, and consequent increased proportion of fibrin, as compared with the red globules, and by the sluggish manner in which the blood would be propelled through the vessels by the weakened heart.

Mr. LANE then communicated a case of

**EXTENSIVE DISEASE OF THE BONES OF THE SKULL,
IN WHICH DEATH ENSUED FROM EXPOSURE OF
THE BRAIN.**

The patient, a female, contracted syphilis from her husband, and subsequently suffered from ulcers on the legs, eruptions on the skin, ulcerating nodes on the forehead, and destructive ulceration of the septum nasi. She was admitted into the Lock Hospital during July, 1856. She was then much disfigured by extensive ulceration on her face, and consequent exposure of bone, and by ulceration of the eyelids and lips; the external parts of the nose had disappeared, and the right eye was opaque, the left being destroyed by sloughing of the cornea a few days before admission. A large portion of the os frontis was dead and exposed, as were also the alveolar processes of the superior maxillary bones, opposite the incisor teeth, as well as also the ossa nasi. The interior of the nostril was also involved in the disease, the hard palate being slightly affected, and the soft palate not at all. Other nodes, &c., existed in other parts of the body. She was treated generously; took quinine, nitric acid, sarsaparilla, and iodide of potassium. All her bad symptoms improved under this treatment; the ulcerations of the cheeks and lips cicatrized, and the dead bone loosened by degrees, but did not separate until December. On the 25th of that month, the whole of the dead bone fell in one piece from its position, it consisting of a large portion of the entire thickness of the os frontis, the entire ossa nasi, and the ascending nasal plate and alveolar process of the left superior maxillary bone. The dura mater, thus exposed, was healthy, except a small portion outside the frontal eminence, which was of a dirty-white colour, and evidently bereft of its vitality. This slough soon separated, and the subjacent portion of brain protruded. This hernia cerebri, in a short time, measured two or three inches, and was about the thickness of two fingers, and reached nearly as low as the angle of the mouth before it was excised. Other protrusions succeeded, consisting of dirty-white pulpy substance. This cicatrization proceeded for some time, and no brain symptoms occurred; yet, on the 8th of February, 1857, paralysis of the right arm and leg occurred. The

brain then ceased to protrude, she became comatose, and on the 17th she died.

After death the dura mater forming the margin of the opening, through which the hernia cerebri took place, had formed adhesions with the arachnoid, so as to close the cavity of that membrane. The convulsions and their membranes were healthy; but on slicing down the left hemisphere to the level of the left lateral ventricle, it was found excavated in its anterior lobe, from the external wound backwards into the left ventricle. This excavation was funnel-shaped, the case being at the external wound, and the apex opening into the ventricle. The whole of this track had a sloughy boundary of a dark-brown colour. The corpus callosum seemed softer and slightly yellower than natural.

Mr. CUMBERBATCH read a case of

HÆMATURIA IN A CHILD.

The patient, a healthy boy eight years of age, was seen by Mr. Cumberbatch on the 7th September, having passed urine tinged with blood. It appeared that in the month of July preceding, attention was arrested one morning by the state of his urine, which was described as being dark, with a sediment like coffee-grounds. There being no constitutional disturbance sufficient to account for this, a sifting inquiry was made for some adequate exciting cause, when it was elicited that he had some days before, in the school-room, been pushed rather forcibly by his tutor, and had come in contact with a desk or form. This violence, however, was so slight as to cause hardly any pain, neither was there any mark of external injury. Assuming that so marked a symptom could not have escaped notice, it was singular that the appearance of blood in the urine should not have followed sooner upon the injury. The treatment comprised rest, bland nourishment, and various astringent remedies (excepting tannin, or gallic acid.) Nearly twelve weeks elapsed before the urine resumed its normal colour. When first seen by Mr. Cumberbatch the symptoms were not urgent, the urine was but slightly tintured, and the accompanying disturbance of system inconsiderable. There was no pain on micturition, nor over the region of the kidney. The attack had not been ushered in by rigor or pyrexia; nor had any other blow or fall been received. The rational signs of calculus were absent, and no scirrhus deposit had been observed in the urine. The first day's treatment consisted of a mild aperient, and small doses of gallic acid. The following day found an aggravation of all the symptoms; the urine was blood-red in colour, without flocculent or mucous deposit, the appearance being equally diffused throughout, and yielded a dense chocolate precipitate on boiling; there was also some pain in passing it, and pressure over the kidneys on the right side caused an uneasy sensation. The tongue was more furred, with fuller pulse. Gallic acid was given in three-grain doses every two hours, with one grain of Dover's powder; low diet and demulcent drinks. To-

wards evening, as no improvement had occurred and the flow of blood was unabated, five leeches were applied over the right kidney; a purge of calomel and jalap was ordered, as the bowels were sluggish; and eight minims of tincture of sesquichloride of iron given every second hour, in place of the gallic acid. The hæmorrhage lasted through the night, nor was it disposed to moderate the next day; the urine continuing dark, and giving out a strong, heavy smell of blood. A mixture consisting of sulphate of magnesia, nitrate of potass, and infusion of roses was now given, alternately with the iron. Pounded ice, in a bladder, was applied over the kidneys. On the succeeding morning improvement commenced. The urine presented a lighter hue, and the blood tended more to a cloudy deposit; the tongue was clean, and the pulse less frequent; the bowels had been freely opened. A gradual diminution took place in the quantity of blood passed; and at the expiration of three weeks all trace of the disease had vanished; and, now, after the lapse of four years, there was no return. Mr. Cumberbatch then submitted to the consideration of the Society the following points of practical bearing on the case:—

1st. Was the original attack idiopathic, or the result of the blow, admittedly so slight as to attract no notice at the time? and if so, why did four days elapse before the appearance of blood in the urine?

2ndly. Did the hæmorrhage proceed from the kidneys or bladder?

Lastly. What is proper treatment in these cases?

In respect to the first query, the author referred to the almost unanimous opinion of systematic writers, as to the undoubted rarity of idiopathic hæmaturia; and, briefly reviewing the few cases that had been represented as such, he expressed an opinion that, if we excluded injury, internal irritants, (whether morbid elements in the blood or acrid substances, together with calculous deposit), and seven reputed vicarious and periodic discharges from the urinary passages, it would be difficult to find a case in the strict sense of the word idiopathic. After a passing allusion to the diagnosis between renal and vesicular hæmorrhage, he thought the history of this case—the dull pain in the kidney, and the equal diffusion of the blood throughout the urine, rendered the nature of the attack sufficiently clear, without the subsidiary aid of the microscope. On the important point of treatment, besides the recognised modes of cure, modified to the requirements of each case, he thought gallic acid, on the whole, the most valuable astringent we possessed.

MR. JAMES K. LAUD exhibited a

LARGE FATTY TUMOUR

which he had removed from a female patient in St. Mary's Hospital. The tumour weighed 3 lb. 14 oz.; it had developed itself in the left labium, and hung down pendulous between the thighs. The skin of the labium and the mucous mem-

brane of the adjacent nymphæ being tightly extended over it. It was lobulated and distinctly defined. The skin on one side and the mucous membrane on the other formed a slightly-constricted pedicle by which it was attached. The patient, thirty-eight years of age, was the wife of a soldier in the Fusilier Guards. She first noticed a swelling in the labium nine years ago. Two years and a half ago she accompanied her husband to the East, and remained with the army during the whole of the Russian war, having frequently to take long marches and to undergo great exertion and fatigue. At the time of her leaving England it had not attained to more than a third of its present size, but during her absence it grew much and rapidly, in consequence, as she supposed, of the increased irritation occasioned by constant exercise. The tumour was removed without difficulty, the wound healed by the first intention, and she rapidly recovered. Mr. Lane proceeded to remark that the case was interesting on account of the extreme rarity of fatty growths in situations where, as in the scrotum and labium, the cellular tissue does not naturally contain adipose matter. Fatty tumours originating in the scrotum are rarely if ever seen; and Mr. Paget, writing on this subject, only refers to one recorded instance in which a fatty tumour was met with in the labium.

MR. MILNER stated that he had, in Brazil, removed a fatty tumour, the size of an hen's egg, from the labium of a negress. In this case it was suspended by a pedicle of skin nearly six inches in length.

EPIDEMIOLOGICAL SOCIETY.

DR. BABINGTON, PRESIDENT.

DR. M'WILLIAM read the following paper:—

Report of an Outbreak of Fever amongst the Crew of the Ottoman Line-of-battle Ship, "*Tesherefi*;" also of an Outbreak of Scurvy amongst the Crew of the Ottoman Big-of-War, "*Fezri-séfet*." By J. N. RADCLIFFE, M.R.C.S., Eng. Late of the Ottoman Medical Staff.

In March, 1858, an outbreak of fever occurred amongst the crew of the Ottoman line-of-battle ship *Tesherefi*, at anchor off Sinope. The determining causes of the outbreak were, apparently, as follows: On the 4th of March, after a period of fine open weather, a severe snow-storm set in, and continued for forty-eight hours. During the snow-storm, those of the crew of the *Tesherefi* who slept upon the second deck suffered considerable discomfort from the cold, and they requested permission to sleep upon the lower deck. The request was granted, and for several nights the whole of the crew, numbering 540 men (half the ship's complement), were huddled together on the confined and ill-ventilated lower deck. It was while the crew were thus crowded together that disease broke out amongst them, and in twenty days eighty of the men were laid up

with fever or bronchitis. Previous to this general outbreak of disease there had been two or three cases of continued fever among the crew (the number of sick varying ordinarily from five to fifteen); but with these exceptions the men had had good health, and they had been well fed. On the 20th of March, when eighty men had been attacked with sickness, and when fresh cases were occurring daily, the majority of the sick were removed from the ship, and sent to the Quarantine Station. On the 24th, the captain of the *Tesherefish* sought aid of Dr. Le Mesurier, acting deputy-inspector of hospitals, attached to the Ottoman army, and Mr. W. N. Kiallmark and myself were directed to take charge of the patients in the Quarantine Station. Up to this period the sick had been attended by the surgeon of the ship, and five cases of fever had terminated fatally. The quarantine buildings at Sinope are situated in the lower quadrangle of the ancient, and ruined citadel. Their position is bad, as they are shut out from the winds by lofty walls, have no proper drainage, and are exposed to the emanations from two large cesspools. The buildings had been set apart for the purposes of a military hospital soon after the removal of the Ottoman army, under the command of H. H. Omar Pasha, to Mongrolia; and Dr. Le Mesurier, had by dint of patience and perseverance, contrived to get them fitted up so as to form a very satisfactory temporary hospital. It was while the buildings were thus fitted for hospital purposes that the sick from the *Tesherefish* were removed to them, and that Mr. Kiallmark and myself assumed the charge. On the day that we entered upon our duties we found forty-three patients in the main building and six patients in an adjoining shed. The sick in the main building, with the exception of one patient, who, wildly delirious, was placed in a room apart, were packed in six of the rooms (the dimensions of the different rooms being fourteen feet square and eleven feet in height), seven patients being placed in each of the six apartments. The beds which were placed upon the floor, touched each other, being laid side by side, and there was barely sufficient space left for the door to open, and for a stove, to burn wood, or for a mangal (charcoal burner). The stoves were fully heated, and the mangals were filled with incandescent charcoal, and almost every crevice by which air could be admitted to the rooms was closed up. The state of the atmosphere, under these circumstances may be better conceived than described; the intense heat, the pungent wood smoke, or the unpleasant smell from the burning charcoal, and the foul odour from the patients, were almost overpowering. The state of the patients was in keeping with the condition of the wards. Two of the men suffering from fever were dying, and the remainder, without exception, were so depressed, and the majority of the cases had so formidable an aspect, that Mr. Kiallmark and myself were almost inclined to imagine that the fever, the most prevalent affection, was, as common report had it, of a malignant character. We immediately caused the patients to be distributed

through the different wards and sheds, and took steps to secure an efficient ventilation, and in thirty-six hours there was so marked an improvement in the state of the cases, that it could not be doubted that the peculiar depression and the more formidable symptoms which had characterized the cases when first seen had depended, in a great measure, on the crowded condition and the imperfect ventilation of the wards. In the ventilation of the sheds, recourse was had to a principle which has been very ably realized by Mr. Charles Watson, of Halifax.

If a chamber containing air of a higher temperature than the external atmosphere, communicate with the outer atmosphere by means of a tube which has a diaphragm running along the centre, a double current will be established, the warmer air passing out of the chamber along one division of the tube, the colder air passing into the chamber along the other division; and if the tube be of fitting dimensions, an amount of fresh air will pass into the chamber sufficient to keep it efficiently ventilated, even if there be no other means of ingress to the air. A wooden turret, with central diaphragm, and properly roofed to shut out rain, was run from the ceiling of each shed through the roof, and by this means a tolerably good ventilation was secured, even under unfavourable circumstances. The value of this method of ventilation was great, as it could not well be tampered with, and the Ottoman has a most pestiferous habit of closing every aperture which will admit air during cold or boisterous weather. In the main building, where this system of ventilation could not be adopted, it was only by constant watchfulness that a proper ventilation could be secured. On an inspection of the ship we found that it was tolerably clean, and that it was free from foul smells. We directed that the crew should be dispersed, at night, upon the upper deck, that the different decks should be cleansed for several weeks by dry-rubbing; that pannikins filled with charcoal should be distributed about the lower deck; and that cases of sickness should be sent on shore as soon as they occurred. These measures were carried out, and, in a fortnight, fever ceased to appear on board the ship. The *Tesherefish* was comparatively a new ship, and during the war she had been used as a troop-ship. The crew had not a very satisfactory appearance, the attire being wretched, and, like that of the Ottoman soldier, it was made from the worst materials. The men, as a rule, were inferior in stature and physical development to the bulk of the soldiers under the command of H. H. Omar Pasha. This remark, moreover, holds good of the crew of the brig-of-war *Fevri-sefet*, also, at that time, anchored off Sinope, notwithstanding that there were a greater proportion of well developed men amongst the crew of that vessel than amongst the crew of the *Tesherefish*. On an examination of the tongues of the crew of the latter vessel, the interesting fact was ascertained, that of the whole number examined—480, only twenty were in a truly healthy condition. The remainder were

either pale, flabby, and broad, the edges being indented with the teeth; or they were pointed, red, and glazed; or pale and fissured. Few also of the *Fezri-sefet's* crew were found to possess healthy tongues. On an inspection of the crew of that vessel, 120 in number, it was ascertained that, with two or three exceptions, the tongues of the men were pale, and flabby, or more or less fissured. I had no opportunity of ascertaining whether a like condition of the tongue was prevalent amongst the soldiers of the Ottoman army. The *Fezri-sefet* had been stationed off Kamiesch ninety days, and during that period, the crew had rarely received rations of meat and vegetables. Soon after the brig was stationed at Sinope, several of the men were prostrated from scurvy, and they were sent into the hospital; and, on an inspection of the crew, it was found that every man was affected, more or less, with the disease. The ship's stores contained neither lime-juice, nor citric acid, nor the mineral acids, and the apothecary was helpless amongst the crew. The only vegetable food which could be procured in Sinope, in quantity sufficient for the men, when the vessel anchored off the port (March), was onions; and it was directed that this vegetable should be issued freely to the crew daily, and eaten raw. A scanty supply of fresh meat was also obtained; but no other measures were had recourse to for checking the disease, as the captain of the brig seemed to be averse to receiving assistance from the English surgeons. The change in the diet was, however, sufficient to prevent any further development of the scurvy while the ship remained at Sinope. The number of sick received into the hospital from the two ships, the character of the cases, and the mortality, were as follows:—From the 24th of March to the 29th of April, 103 cases were admitted into the hospital. Of these, 57 were cases of fever, 53 being cases of continued, and 4 cases of intermittent fever. Of the remaining cases, 11 were cases of diarrhoea, 10 of bronchitis, 4 of conjunctivitis, 8 of scurvy, 11 of various chronic diseases, 1 was a case of dysentery, and 1 of pleuro-pneumonia. The whole of the cases of scurvy, and two cases of diarrhoea, came from the *Fezri-sefet*. The total number of deaths amounted to 5—3 being deaths from continued fever, 1 being a death from diarrhoea (a chronic case), and 1 from scurvy. The continued fever was of an asthenic type; the majority of the cases were complicated with bronchitis; and the treatment had to be directed mainly towards the sustentation of the vital powers. The other forms of disease presented nothing unusual in their progress.

A Mirror
OF THE PRACTICE OF
MEDICINE AND SURGERY
IN THE
HOSPITALS OF LONDON.

Nulla est alia pro certo noscendi via, nisi quam plurimas et morborum, et dissectionum historias, tam aliorum proprias, collectas habere et inter se comparare.—MORGAGNI, *De Sed. et Caus. Morb.* lib. 14. Proœmium.

WESTMINSTER HOSPITAL.

Circumscribed Empyema, Following Pleuro-Pneumonia; Paracentesis Thoracis; Recovery.

(Under the care of Dr. FINGHAM).

THE greater part of the right lung, together with the pleura, were involved in inflammation in the following case, as also was the base of the left lung. The usual symptoms were present, with well-marked physical signs. A circumscribed empyema formed below the third rib, anteriorly, over the right side of the chest, with manifest bulging of the intercostal spaces in the mammary region; this side of the chest, also, measured more than the left. Paracentesis was performed, and about an ounce of healthy pus evacuated. This proceeding was not followed by inconvenience; on the contrary, matters seemed to improve from the date of its performance, and the physical signs gradually became more natural. On June 11th, the report states the sputum to be "frothy, colourless mucus;" this was eleven days after the tapping; if it had been purulent before this, there is no doubt it would not have escaped attention; the patient, however, perspired much at night, and lost flesh. Subsequently to this, namely, on the 15th, general bronchitic symptoms were present, with troublesome cough and profuse mucopurulent expectoration. At a later period all the symptoms improved, with a falling-in of the chest at the seat of the abscess; and finally the patient left for the country, where he became completely restored, and was examined at the hospital on his return.

We have been thus particular in the foregoing details, because no physician for one moment would believe that the ounce of pus withdrawn by the trocar and canula represented the whole of the fluid in the circumscribed abscess in the pleura, which we may safely say contained several ounces. Now how was the remainder of the pus got rid of? The answer is clear—by absorption; which permitted of its expectoration through the bronchial tubes, the mucous membrane of which took on a sort of compensative inflammation, if it may so be called, or vicarious action, to produce this result. Absorption, therefore, has predominated over effusion, adhesion between the surface of the lung and chest took place, and contraction of the cavity ensued. In such a case as this, the liver would encroach upon the contracted chest, and thus account for the dulness in a situation which otherwise would have been occupied by healthy lung.

Cases like the following are full of practical value to the student, and are well worthy of study. Our readers who devote themselves to accurate clinical study associated with sound reflection, will do well to consult Dr. Robert L. Macdonnell's Contributions to the Diagnosis of Empyema, in the *Dublin Journal of Medical Science* for 1844, which afford a fund of valuable information in connexion with this subject. He has been the first to point out the modes by which the cure of an empyema is accomplished through the aid of the bronchial tubes: "In one, the membrane takes on a vicarious action, by which large quantities of pus are discharged without any distinct evidence of inflammation being set up in the membrane, or communication being established between the bronchial tubes and the sac of the abscess. In the other form, direct communication exists between the bronchial tube and the sac of the empyema. They are both efforts of Nature, to get rid of the purulent collection and effect a spontaneous cure."

R. C—, aged twenty-three, a journeyman baker, and by no means of robust appearance, was admitted April 25th, 1856, suffering under a well-marked attack of pleuro-pneumonia of the right lung; the pneumonic symptoms, however, notably predominating over those of pleurisy. He was taken ill with pain in the side &c. on the 21st; had, on admission, the usual symptoms of pneumonia involving four-fifths of the right lung, and on the 29th had the base of the left similarly affected. Under a stimulating plan of treatment, with the application of turpentine to the chest, and opiates at night to allay the cough, the more urgent symptoms yielded; still the improvement was not so rapid as it might have been. On May 8th the report was as follows:—Respirations 40; pulse 88; appetite good; skin of moderate warmth. Physical signs: Dulness on percussion remained over the lower two-thirds of the right lung behind, and in front below as high as the third rib; in these situations coarse regular crepitation was audible; elsewhere the breathing was vesicular, but rough. On the left side there was no dullness; but at the base a little coarse crepitation. A blister was ordered to the right side, and three grains of blue pill, with one-third of a grain of opium, given every six hours, the patient at the same time taking meat diet, and a few ounces of wine. On the 12th he was not so well; the respirations were 44; the pulse 96, and he was much troubled by the cough, which came on in violent paroxysms, lasting ten to fifteen minutes, with scanty white frothy expectoration; he perspired also much during sleep. On the 14th the general symptoms were much the same, but the physical signs had somewhat altered; resonance was returning at the lower portion of the right lung behind, but in front the dullness from below up to the third rib was more marked than ever, and in this situation neither natural breathing nor morbid sound was audible. On the 17th the respirations were 28; his general condition otherwise the same; his mouth was slightly sore from

the mercury. The pills were omitted, and the following draught ordered:—Dilute nitric acid, and dilute hydrochloric acid, of each eight minims; compound tincture of cinchona, half a drachm, and ten drachms of decoction of cinchona, every six hours. On the 23rd the respirations were 36; the pulse 90, and his nights were bad; he had also much perspiration, and his cough was also very troublesome. Physical signs: Right side—anteriorly resonance as low as third rib, over which space the breathing was harsh; below this point there was complete dullness, with manifest bulging of the mammary region, absence of vocal fremitus, and silent breathing. The lateral region was dull with vocal fremitus, and coarse crepitation. In posterior region there was resonance throughout, with rough vascular breathing over the superior half, and coarse crepitation inferiorly. On the 31st his general condition was much as at the last report; the physical signs were also the same. It was moreover ascertained that the right side of the chest measured across the nipple an inch more than on the corresponding side, and the obliteration of the fourth, fifth, and sixth intercostal spaces was very marked. Under these circumstances Mr. Brooke was requested to pass a grooved needle through the fifth intercostal space at a spot two inches to the right of the sternum. A drop or two of healthy pus escaped, and about an ounce more followed the subsequent introduction of a small hydrocæc trocar and canula in the same situation. The patient suffered very little inconvenience from the operation, and immediately after, the affected side was found to measure very little more than the opposite one. Faint irregular crepitation was also at once audible over the mammary region, though the resonance had not returned. Repeat the mixture.

June 3rd.—Slept well; pulse 92; respiration 30; skin warm and moist; complained only of a little pain in the situation of the puncture. Repeat the mixture.

4th.—Physical signs: Posterior region resonant throughout with vesicular breathing; posterior lateral also resonant with coarse crepitation; anterior-lateral and anterior region, from the third rib downwards, still dull with faint, irregular crepitation of moderate size.

11th.—The physical signs were the same as at the last report, except that vesicular breathing was audible over the whole lateral region. He coughed slightly, and expectorated a small quantity of frothy colourless mucus; he perspired much at night, and did not gain flesh. To have a drachm of cod-liver oil, thrice a day, and fifteen minims of muriated tincture of iron, also thrice a day in an ounce of water.

18th.—During the last three or four days, symptoms of general bronchitis had manifested themselves; the cough had become more troublesome; the expectoration profuse and muco-purulent; and moist, irregular râles were audible over both sides of the chest. A blister was applied, and the compound cascarrilla mixture ordered.

This attack gradually passed away, and on the 27th the condition of the anterior portion of the right side of the chest was found much improved. It was now resonant from clavicle to nipple, the intercostal spaces had become quite flattened, and the side now measured a quarter of an inch less than the other. Under the clavicle, the breathing was roughly vesicular, over the upper half of the mammary region mixed with large crepitation, and posteriorly and laterally it exhibited the irregular râles of bronchitis. He still coughed much, sweated a good deal at night, and was rather losing than gaining flesh. Cod-liver oil increased to two drachms three times a day.

July 2nd.—Resonance now extended to an inch and a half below the nipple, and distant vesicular breathing was audible throughout the mammary region; his cough was much diminished, and the perspirations had greatly abated.

7th.—The cough was nearly gone, and the expectoration scanty; he slept well, and perspired scarcely more than in health. The whole of the right side was now resonant on percussion, with vesicular breathing audible, except anteriorly, from the sixth intercostal space downwards; here it was dull, and no sound, either morbid or natural, was to be heard, this being dependent probably on the liver rising somewhat above its natural level.

At this date, the patient left for the country, where he remained until September 18th, when he came to the hospital. He had taken cod-liver oil during his absence; had now no cough nor expectoration; had gained greatly in flesh, and looked upon himself as quite well. Nothing morbid could be detected by auscultation or percussion, except that the same undue amount of dulness remained in the right infra-mammary region as was observed on his leaving the hospital two months previously.

ROYAL FREE HOSPITAL.

Double Pleurisy and Pneumonia treated by Diaphoretics, Brandy, Beef-tea, and Fish; Recovery.

(Under the care of Dr. BRINTON.)

THE foregoing case was not only of interest from the complication of an empyema which terminated satisfactorily, but the treatment was different from the old plan. The subjoined instance is one of pleuro-pneumonia of both lungs, pursuing a steady course towards cure with mild treatment, supporting the patient with brandy and beef-tea, subsequently changing the latter for fish, the details of which have been furnished us by Mr. W. Curran, the house-surgeon to the hospital.

M. A. S—, single, dress-maker, admitted March 3rd, 1857; about the middle height, rather corpulent, and of nervous temperament. Is a person of good health, and has never been

the subject of any serious ailment, though for the last five years, or whilst engaged as a needlewoman, she has suffered from cough, headache, giddiness, occasional vomiting, and nausea; had no particular pain, but complained of irregular appetite, bad taste, dysmenorrhœa, and failing strength; is nervous and hypochondriacal, and says that the "least thing sometimes puts her out of sorts." About five days ago she felt severe throbbing, and frontal pain of intermittent character, which was aggravated by movement or exertion. Sharp pain in the back of the neck and under the right shoulder-bone, which latter became much worse on Sunday, and affected her as if "sharp knives" were passing through her. She became very sick; the headache and fever increased; the breathing was very hard, rapid, oppressed, and painful, especially in the recumbent posture; and failing in obtaining relief from her ordinary attendant, she applied and was admitted in the following condition:—"Face flushed, excited; *alae nasi* rapidly dilating; visible heaving over thorax; jactitation; involuntary sighing, and some slight dysuria; tongue thickly coated; bowels confined; pulse 150; respiration 48. Respiration sounds, harsh, forced, catching, and bronchial in front. Expiration scarcely detectable; large blowing and loud liquid crepitation at either base; occasionally also heard approaching mamma on left side, with dry grating friction and pectoriloquous *œgophony* in both. A large blister was applied on the right side, which was the first most affected, and a diaphoretic mixture, containing ten minims of ipecacuanha wine and five of laudanum, every four hours; and beef-tea, arrow-root, and two ounces of brandy, a dessert-spoonful of which, with two of water, every three hours.

March 5th.—Eleven A. M.: Breathing on both sides markedly tubular, especially on the left; voice *œgophonic* and whispering; occasional gurgling and coarse *redux* crepitation all over the right base. Sputum viscid and dirty red, not rusty, but of prune-juice or apricot hue. Pulse 150; respiration 50.

6th.—Sputum more viscid and sticky, not so copious or discoloured, easier. Pulse 144; respiration 46. Both sides now almost equally involved, but pain more persistent in the left, and pleural rubbing advancing towards mamma on that side. Ordered two drachms of castor oil immediately.

7th.—Respiration dry, noisy, superficial, and markedly tubular; grazing friction all over the right side; no crepitation; voice-tone shrill, *œgophonic*, and pectoriloquous on both sides, but very little moisture in either. Pulse 130; respiration 44. To increase the brandy to three ounces, and have boiled fish instead of beef-tea. Bowels fully open; generally improved.

8th.—Pulse 110; respiration 36. Improving; chest sounds much as above.

9th.—Respiration still blowing; very tubular and quasi amphoric on both sides, but most so on the right, where also there is some large crepita-

tion; voice continues pectoriloquous and whispering; less cegophonic and not so superficial in either. Pulse 126; respiration 29; progresses favourably.

10th.—In every respect better. Breathing on both sides much less bronchial; no friction fremitus; some liquid sub-crepitant bronchus at the right base, where the voice is still somewhat shrill and whispering. Otherwise the condition of the patient is so much improved, and the chest symptoms so favourably disposed to subside, that she may be now regarded as quite out of danger, and in a fair way towards a speedy convalescence.

GUY'S HOSPITAL.

Cancerous Tumour of the Ham in a Female, aged thirty-two, Implicating the Head of the Tibia; Amputation; Recovery.

(Under the care of Mr. BIRKETT).

Of the malignant form of tumours of bone, such as those recognised as osteo-cancer, or osteocephaloma, the immediate vicinity or neighbourhood of the knee-joint seems to be a favourite seat for their appearance, especially the head of the tibia. There is a peculiar predisposition in the head of the tibia for the manifestation of various forms of disease, necrosis especially, as Mr. Stanley has pointed out in his admirable work on Diseases of the Bones. There are two distinct forms, however, of cancer of the bones generally recognised by surgeons, but independent of their specific characters, and these are the central and peripheral; the former springing from the medullary canal, and the latter being either attached to, or growing from the compact osseous structure. Examples of both forms have appeared in our "Mirror" on many different occasions.

Lately we have seen three instances of disease close to, but not actually involving the knee-joint; the first of these we place upon record to-day; the second was myeloid disease of the condyles of the femur, whilst the third was one of colloid cancer of the ham in an elderly female, whose leg was amputated. We will give these two in our next number. In these three instances we have illustrations of fibrous cancer, myeloid, disease, and colloid cancer. In the following case the disease was peripheral, subsequently involved the bone, the cancellous structure of whose interior was replaced by the cancer, a characteristic worthy of note in these cases, and one also present in Mr. Stanley's case of medullary cancer of the femur already referred to.

We may observe that the peripheral form of cancer is the most common, although the fibrous variety is by no means so frequent as the encephaloid. Some authors believe that true scirrhus is never found in bone; Mr. Birkett's case is a proof that it is occasionally present. The head of the tibia and lower end of the femur are the parts in which cancer is most frequently found in bones, and we need not be surprised to find an unusual form of cancer in the head of the tibia, from the

reasons given. The only resource to be thought of in these cases is amputation, which for the time being proves successful, the permanency of cure depending upon the nature of the special affection.

Ann L—, aged thirty-two, the mother of eight children, the last of whom was born on the 28th November last, a healthy-looking woman, was admitted into Guy's Hospital about a month after her confinement, with a swelling in the ham. About the third month of her pregnancy her attention was directed to the inside of the head of the right tibia, in consequence of violent pain; a swelling then appeared in two or three months, which slowly increased in size, but not to any extent until after parturition. While in the hospital the internal tuberosity of the tibia appeared to be expanded; the internal flexor tendons were spread over the growth, and the knee-joint was semi-flexed, and could not be perfectly extended. She was placed under the influence of chloroform, and the joint extended, but it could not be long retained in that position on account of the pain it caused. Warmth and moisture generally reduced the intense pain. The growth had a very broad base, could not be moved, and seemed of osseous hardness. The diagnosis of the case was a difficult one. She went out and re-entered the hospital on the 21st April, with her health improved, but the tumour increased in size, the knee more immovably flexed, the pain rather less, the growth more acuminated, and the integument over it shining, slightly injected, but not very much so. Her infant was weaned. On the 22nd April the tumour was punctured, and a little blood only escaped. The patient never suffered any injury, nor was there any hereditary predisposition to disease.

On the 5th of May, amputation was performed at the lower third of the thigh, under the influence of chloroform. There was at this time some increasing enlargement of the lymphatic glands in the groin, which may have arisen from the puncture of the growth. On a section of the tibia and diseased mass being made, it was found to be cancer of a firm and fibrous character, if regarded strictly as carcinoma. This was confirmed by the microscope. The whole of the cancellous tissue of the head of the tibia was replaced by a new growth, which Mr. Birkett considered characteristic of carcinoma. The entire head of the tibia was thus occupied, with the disease extending behind the articulation, and involving the inter-articular fibro-cartilages.

Myeloid Tumour of the Condyles of the Femur, with no Assignable Origin, in a Boy, aged fifteen years; Amputation; Recovery.

(Under the care of Mr. HUTTON.)

At the present day it is of great importance to know everything about a myeloid tumour, because it is a matter which enables us to estimate the prognosis of a case. The student will gain much information upon this subject in Mr. Paget's work on Tumours, but especially would we refer

him to the 39th volume of the "Medico-Chirurgical Transactions," in which he will find a valuable paper on Myeloid and Myelocystic Tumours of Bone, by Mr. Henry Gray—a paper which at the same time particularly illustrates the case we record to-day, in which that form of growth involved the condyles of the femur, requiring amputation of the leg.

Those well versed in the pathology of tumours, of bone especially, are aware that it is almost impossible to distinguish between a hæmatoid and medullary cancer affecting the osseous tissues and the true myeloid disease; and some years ago patients whose amputated limbs contained this last form of disease, which was then looked upon as cancer, not only recovered from the operation, but had no return of the disease. Such instances might at one time have been looked upon as local manifestations of cancer, actually cured by removal of the disease. Such is not the case, however.

What are the characteristics of myeloid tumours, as especially shown by Mr. Henry Gray's interesting researches? A growth very closely resembling malignant disease to the naked eye, but in reality not so; representing in structure a kind of overgrowth of some of the normal constituents of bone, and originating probably from some local cause.

The essential elements consist in all cases of forms precisely similar to what is found in the marrow and other elements of bone in the fœtus, and at an early period of life; hence the name "myeloid" tumours. In some instances their structure is so intermingled with cysts, that Mr. Gray very properly terms them "myelo-cystic" tumours in such cases. These tumours are for the most part limited in their development and growth to the osseous tissue, or its investing membranes, the periosteum and dura matter. They may occur in any bone; their growth is much less rapid than that of malignant disease, and the early period of life is chosen for their appearance. They are not malignant, and never return when once removed; and lastly, they present a near relation with fibrous and fibrocystic tumours, and cartilaginous and osseous.

Besides the foregoing, there is another point of importance worth remembering. In true malignant disease of bone the shaft is extensively infiltrated with the particular affection itself; but in myeloid tumours the disease does not infiltrate the substance of the bone. In the nine cases given by Mr. Gray the tumours took their origin in the epiphysal ends of the long bones; such was the case also in Mr. Hilton's patient. The ages varied from eighteen to thirty-six in Mr. Gray's cases, and in Mr. Paget's five cases the age was from fifteen to twenty-four. Early life, therefore, is favorable to their development; Mr. Hilton's boy was fifteen years old, and no cause was assignable for its appearance. There is no cachexia in myeloid disease, nor enlargement of the glands—points of importance in the diagnosis. But it is solely by microscopic examination that the true nature of the disease is determined, and, although

perfectly innocent in character, amputation must be resorted to to remove it. The following abstract was kindly furnished us by Mr. T. Bryant, the late surgical registrar to the hospital:—

Joseph S—, aged fifteen, a gas-fitter, residing at Walworth, admitted April 8th, 1857. He had always enjoyed good health till the end of December last, when, without any known cause, his left knee began to swell, unaccompanied with pain. The enlargement gradually increased, and stiffness of the joint appeared, with some degree of pain on pressure. He continued, however, at his work till three weeks ago, when, by medical advice he applied blisters and took cod-liver oil. The growth became stationary. When admitted, he presented a delicate aspect, but his body was well nourished. In the situation of the condyles of the left femur, and extending upwards, there was a swelling of a firm, even, and tense character, which apparently consisted of dilated bone. The skin was free, and not discoloured, but very painful on applying pressure. The joint was movable, and evidently unaffected.

A few days after admission, the growth was punctured, but blood only escaped. On the 28th of April the thigh was amputated above the middle, and the patient since that time has done well.

On examining the growth, its character became apparent. It had commenced in the lower part of the shaft of the femur, which it had expanded, some part of the shell of bone being now visible; it had encroached partially upon the epiphysis, which at the line of junction was slightly diseased; some new bone may be seen at the part where it is connected with the shaft. To the eye the tumour presented the usual features of that recently-recognised growth, the myeloid tumour; it was, perhaps, unusually vascular, the cells being nearly all filled with blood. Microscopically, also, it presented the large, many-nucleated cells described as characteristic of myeloid growths.

We will take the opportunity of dwelling upon the minute structure of the myeloid disease when an opportunity is afforded of placing another example on record.

ROYAL FREE HOSPITAL.

Cases of Epilepsy, Associated with Amenorrhœa and Vicarious Menstruation, successfully treated with the Iodide of Potassium.

(Under the care of Dr. O'CONNOR.)

EPILEPSY, whether depending on functional or organic disease, is one of a class of cases which is too often a cause of anxiety to the medical attendant, as well as to those immediately connected with patients, and especially when occurring in females from puberty to twenty-five or thirty years of age, may be looked on as frequently depending on some amount of functional derangement of the uterus. For some time back, many cases of this description have fallen under the care of Dr. O'Connor, at the Royal Free Hospital;

and as the simple plan of treatment successfully pursued by him in those forms of epilepsy has been productive of good results, we have considered it of sufficient importance to record the outlines of a few cases which have recently been treated by him. He informs us, that he is indebted to a communication from Dr. Pinching, published in the *Dublin Journal of Medicine*, of 1836, for the use of iodine of potassium as an emmenagogue, but which he (Dr. O'Connor) is in the habit of using in those cases of amenorrhœa characterized by any amount of undue excitement of the system associated with epilepsy. The depressing power of the iodide of potassium, as well as its well-known specific effect in promoting the menstrual secretion, would seem to warrant its use in this class of cases.

The first case is that of a nursemaid, seventeen years of age, of a full and bloated habit, with a large head and low forehead, having a sullen expression, who has constantly suffered from headache and frequent sickness. She menstruated for the first time when in her fourteenth year; but the menstrual flow was at each time scanty. Soon after she entered service as assistant in the nursery in a gentleman's family, where her diet was much better than she was in the habit of having before. She was much confined to the house, and soon after menstruation ceased altogether. This was followed by severe headaches, which continued with only occasional relief. In a short time she was seized with a fit, in which she continued for nearly two hours, and remained unconscious for some time after its cessation. From time to time, at intervals of only a few days, the fits returned, and she was obliged to leave her situation. For some months she was under treatment with only partial relief, the fits, though considerably diminished in frequency, had not altogether disappeared. She again entered service in the same capacity as before, but was obliged to leave in consequence of the more frequent recurrence of the fits. She was admitted a patient, at the Royal Free Hospital, under the care of Dr. O'Connor, on the 1st of April last. At that time the account given by her mother was, that her fits were almost daily; she foamed at the mouth abundantly during their continuance, and appeared like one who had lost her senses; her bowels were constantly confined, and she complained of increasing headache; she had not menstruated for more than a year. Her pulse was full and frequent, and the tongue furred and clammy. She was ordered a strong cathartic dose, to be repeated occasionally, with a draught composed of five grains of the iodide of potassium, ten minims of liquor potassa, and one ounce of infusion of quassia, three times a day. This plan of treatment was continued for a week with some benefit. The fits were less frequent, the headache considerably diminished, and the bowels more regular without the cathartic medicine. On the 14th of April menstruation occurred; and from that time she has continued free from the fits.

The next case, admitted on the 8th of April, is that of a servant, twenty-seven years of age, who

has suffered from vomiting of blood nearly every month for more than five years. It has been sometimes more abundant than others. For this she was treated as one suffering from stomach affection. She has been subject to epileptic seizures for some years; and has not menstruated for nearly seven years. Before that time, her menstruation was but scanty; and she has always suffered severe headaches, and what she calls bilious attacks. She was of full habit and florid complexion, with a very full pulse, and bowels constipated. The treatment pursued in this case was similar to the preceding, and was attended with an equally beneficial result.

The third case we have to record, is that of a young woman, by occupation a machine stitcher, who is engaged in making collars at a warehouse in the City, where she has been much confined with little out-of-door exercise. She is twenty-one years of age, tall, well-formed, and very intellectual-looking; she has menstruated but scantily since the first appearance of menstruation, six years ago, and latterly it have ceased altogether. For nearly seven years she has been subject to the epileptic seizures, which has often incapacitated her for work, and for which she has frequently been under treatment with only temporary relief. For the last few months menstruation has ceased altogether, the fits have been more frequent, with uninterrupted headache, and her bowels obstinately constipated. She was admitted a patient at the Royal Free Hospital, on the 28th of March, when the iodide of potassium, with the occasional use of cathartic remedies, was ordered her, which she continued until the 7th of May, when menstruation came on abundantly, the fits having previously nearly entirely ceased.

UNIVERSITY COLLEGE HOSPITAL.

Colloid Cancer of the Calf of the Leg of a Female, Aged Fifty-two Years, commencing Four Years ago; Amputation at the Thigh; Death from Pyæmia.

(Under the care of Mr. Marshall.)

THAT variety of cancer, known under the name of colloid or alveolar, is exceedingly rare and uncommon as contrasted with the other varieties of this disease; and, when it does occur, the naked-eye appearances are really unmistakable, and when once seen cannot be forgotten. One of the most genuine examples we ever remember to have seen amongst the many we have witnessed in hospital practice, came under our notice on the 29th of April, when a section of the tumour was made by Mr. Marshall, who amputated the leg. A large portion of it was gelatinous; hence one of the names of this form of cancer the gelatiniform. There were a number of cells filled with a clear semi-transparent, yellowish gelatinous fluid, or honey-like material, as it is called, which resembles in structure a honeycomb, depending upon distinctly fibrous septa, regularly arranged. As a rule, colloid cancer is more generally met with implicating the internal

organs of the body than its exterior, especially the abdominal viscera and the peritoneum, some interesting examples of which are recorded in the "Transactions" of the Pathological Society—e.g., affecting the pancreas, in the sixth volume, the mesentery, in the forthcoming eighth volume, and others. A very beautiful example of pure colloid cancer affecting the breast was exhibited before this Society at its last session, by Mr. Price; no other variety of cancer was associated with it, and yet on reference to Dr. Marsden's excellent translation of Velpeau on "Cancer of the Breast," we find him stating that he has never met with purely colloid matter alone in the testicle, or the bosom; he has always seen it associated with lobules, clews, and masses of an entirely different aspect. (p. 46.) Velpeau also gives a very striking instance of the disease, in the form of a tumour, which occupied the ham, as large as the head of an adult, and in many respects it is the counterpart of Mr. Marshall's, with this exception, that the microscope showed the fibro-plastic element, and no cancer cells. Velpeau thinks such instances merit in every way the title of colloid, but have nothing of the nature of cancer about them. Now we are not advocates for hair splitting in cancers, and think Velpeau's case and Mr. Marshall's genuine instances of true colloid cancer. Experience amongst the first histologists of the day, has proved to demonstration that invariable reliance cannot be placed upon the presence of the cancer cell. We have on former occasions, in our "Mirror," insisted upon reliance, to some extent, upon the external physical manifestations. We will not deny that simple gelatinous tumours *may* exist without cancerous malignancy. We make these remarks because, in Mr. Marshall's case—the subjoined notes of which we extracted from the hospital case-book—the tumour we learnt, was examined by Dr. Jenner, who found, as Mr. Fox, one of the house-surgeons, told us, compound cells, but that he was by no means decided in his opinion as to its being a colloid growth. Every man is welcome to his own opinion. We know that some of the Germans believe colloid cancer to be a mass of degenerated hydatids agglomerated together; but the microscopic evidence to prove such an absurdity has been wanting.

There is an interesting fact connected with the chemistry of colloid cancer, which is that the jelly-like matter contains no gelatine when carefully freed from membranous structure: such was the experience of Müller. The few examples seen in our London museums preserve their appearance tolerably well, as the spirit-of-wine does not interfere with the transparency of the jelly-like matter.

Olive G—, aged fifty-two, residing in the country, single, a servant by occupation, was admitted, on the 21st of April, with a tumour in the calf of the right leg. About four years ago, she noticed a small lump in the lower part of the popliteal space of this leg; shortly afterwards another appeared to come just below the other; and since

then they have gradually increased in size until they occupy the whole of the upper half of the calf, and it now appears to be extending upwards into the popliteal space to the thigh. She can bend her knee very well. Some time ago she had iodine paint applied, but without any relief; and since then she has constantly applied different kinds of lotions. She says that she thinks it was caused by hard work, as she noticed it about a month after she left the service of an old lady who was obliged to be carried up and down stairs every day, and she and the footman had to carry her. Directly she noticed its appearance, she went to a surgeon, who watched it for a short time, but seeing that it was enlarging daily, recommended her to go to the Maidstone Hospital, and have it taken out, which she did not do, as it did not inconvenience her at all. On its attaining to the size of about fifteen or sixteen inches round the leg, she was recommended to come up to town, and become a patient in the hospital. On admission, the leg measured twenty inches and a quarter round over the tumour, which extends over the whole of the upper half of the calf of the leg and a short distance up the popliteal space. It is much harder in some places than others. On the 22nd, Mr. Marshall punctured it with a grooved needle, and a thick, bloody, stringy-looking matter escaped, which was found to contain large quantities of blood-corpuscles and some fibro-plastic cells, and a few pus-corpuscles (!) On the 24th, about two ounces of thick, bloody fluid escaped on using a trocar and canula, but it consisted solely of blood. She was feverish, having passed a restless night, and complained much of her leg. It continued to increase a little in size, and on the 27th a free incision was made into the tumour, with escape of blood, and plugged with lint and bandaged. It was at this time inflamed. On the 29th, Mr. Marshall performed amputation above the knee by the lateral flap operation, on account of the tumour running up into the popliteal space. A longitudinal section of the leg and tumour from the heel upwards being made, the tumour was found to consist of a gelatinous-looking mass, with fibrous partitions, the fascia, extending over the tumour. The stump was dressed in the usual manner, and the flaps brought together by four sutures. She went on very well up to the 4th of May, when a quantity of thick, muddy-looking fluid was evacuated from the anterior part of the thigh; she then felt much easier. Next day, there was much discharge of pus, but more healthy; and on the 6th, a charcoal poultice was applied. A few days later, gangrenous inflammation of the deep-seated structure around the bone, which was soaked in pus, set in, and death ensued on the 21st inst. The lungs were inflamed, and contained numerous small abscesses; and both kidneys were found in a state of granular degeneration, with cysts in one of them.

CANCER HOSPITAL.

Scirrhus-Colloid Cancerous Tumour over the Clavicle; Scirrhus of the Left Lung; Medullary Cancer and Melanosis of an Abdominal Gland; In a Man, aged fifty-nine years.

(Under the care of Dr. MARSDEN and Mr. WERDEN COOKE.)

As might be expected in such an extensive field as is afforded at this hospital, examples of the colloid form of cancer are of course to be met with. We have selected one of considerable interest on the present occasion as an illustration. But in this instance we have the very remarkable association of the medullary, melanotic, scirrhous, and colloid cancers in one body. This circumstance alone, taken independently of the colloid disease, is worthy of note. In former "Mirrors" we have placed upon record combinations of different forms; one every striking instance especially, of association of the epithelial, encephaloid, and melanotic cancers, under Mr. Canton's care, at the Charing-cross Hospital. We have not, however, before given instances of a co-existence of the colloid with other forms. Now we well know that the development of the colloid structure sometimes arises in a basis of scirrhus, as Dr. Walshe has pointed out, and a scirrhus-colloid formation is the result. He refers to a remarkable specimen of cancer of the breast, in the museum of University College, in which a combination of the two species is very well seen. In the abstract of the following case we rather lean to the opinion of the tumour of the neck being a scirrhus-colloid tumour; whilst the left lung was infiltrated with scirrhous cancer in a suppurating condition; and an abdominal tumour, supposed to be a degenerated gland, consisted of medullary cancer with melanosis. Thus, then, we see an illustration here of the cancerous germs taking on different forms of the disease in various parts of the body—scirrhous, colloid, medullary, and melanotic. The first two are expected to be met with together; and the last two are very commonly associated. Thus of the five forms of cancer generally recognised, we have four present here, the epithelial only being excluded. This most clearly proves the common origin of the various forms of cancer, a fact previously pointed out by Carswell.

Thomas F—, aged fifty-nine, of Colchester, had been a patient in St. Mary's Hospital, and Mr. Coulson not considering it a case admitting of operation, he applied and was admitted into the Cancer Hospital, Nov. 11th, 1855. He had observed only four months previous to this date a small tumour, about the size of a hazel-nut, situated over the left clavicle. It increased rapidly, and the superficial veins in the neighbourhood became much congested and prominent. At the time of admission the tumour had increased to the size of a large orange; it was soft and somewhat movable. The superficial vessels, as well of the face as of the neck, were very turgid, and there was cough and dyspnoea, and orthopnoea. There

was no hereditary taint, nor any injury to suggest a cause for the disease. Ammonia and ether, senega and cinchona, with supporting diet, were resorted to, and ultimately camphor and opium, with varying results, until he died on the 30th of December, forty-nine days after admission, and only six months from the first knowledge of the disease.

Autopsy.—The tumour on the clavicle was the size of a large shaddock, and dipped deeply into the whole of the inferior angle of the neck; it was very loosely attached to the clavicle, the bone not being implicated in the disease. The tumour consisted of an aggregate of small cysts, containing a yellow, adhesive, gelatinous fluid. The lung of the same side (left) was entirely infiltrated with cancerous deposit, generally in the scirrhus stage, but in many parts suppurating. It was closely adherent to the ribs and diaphragm. The right lung was healthy. Heart very large and dilated; no hypertrophy. Abdominal organs healthy, except that there was found a mass, the size of a large fist, lying loosely attached to the duodenum, which, upon being cut into, exhibited a dark melanotic aspect, but developed in a medullary basis: from its looseness and round shape, it was evidently a degenerated absorbent gland.

CENTRAL LONDON OPHTHALMIC HOSPITAL.

Morbid Sympathetic Influence between the Eyes; The General Impression of the Implication Inaccurate and Incomplete; Sympathetic Irritation from Staphyloma; Unsatisfactory Results of the Usual Treatment; Certain and Immediate Effects Following the Reduction of the Distended Eye.

(Under the care of Mr. HAYNES WALTON.)

WHAT is the extent of morbid sympathetic influence between the eyes—in what diseases and under what conditions is it most developed? The solution of this question would possess much practical value, but it could not be given except by long and laborious investigation in extensive ophthalmic practice. The general impression of associated implication, even in the profession, is very inaccurate, as many of the supposed examples are merely primary diseases attacking the second eye later and with less severity; it is also incomplete, as there is a class of cases in which the sympathetic action, although of fatal effect, is hardly recognised. It is on the latter that we shall dwell.

Some years since, Mr. Walton brought before the notice of the profession, in one of the medical periodicals (and was also energetic in pointing out to his pupils), the destructive nature of sympathetic action, developed in consequence of disorganizing inflammation in the one eye, the result of idiopathic disease. As an effect of traumatic injury it had been recognised, but is still far from being generally known. Now, there is between these, in symptoms and termination, no practical

difference. To understand the one, therefore, is to know the two; it is, however, essential to be aware that there is a different origin, without which there might be an error in diagnosis. Even Dr. Mackenzie alludes but to the traumatic variety, and in the last edition of his "Diseases of the Eye," 1854, p. 611, writes: "I have now to direct the attention of the reader to a disease which, as it generally proves in the long run intractable, and as it is the result in the one eye of a previously mechanical injury, which has already greatly impaired or destroyed the other, involves in its treatment a heavy responsibility on the part of the practitioner." At the end of the paragraph is this instructive warning: "Whenever I see sympathetic ophthalmitis, even in its first stage, I know that I have to contend with an affection which, however slight its present symptoms may be, is one of the most dangerous inflammations to which the organ of vision is exposed."

According to Mr. Walton, the commonest instances of sympathetic irritation that occur at this hospital are from staphyloma, the result of purulent ophthalmia. These are so alike, resembling each other in all the particulars, that the narrative of a single case will suffice to unfold the disease. We select the last that was treated by him.

J.H.—, aged twenty, had purulent ophthalmia in infancy, and lost one eye. There was a very large staphyloma of the sclerotica, no trace of the cornea, but in place of it a small cicatrix, around which the staphyloma was very vascular, the vessels being disposed in remarkably regular radii. The eyelids could not close over the tumour. There was a purulent discharge. The other eye presented the appearance of incipient disorganization. The cornea was, perhaps, rather reduced. The sclerotica discoloured and full of varicose vessels. The iris dull and puckered, and the pupil adherent in several places. There was intolerance of light, and vision was very imperfect although he could read.

We must refer to the history for the progress of the disease, the order of the symptoms, and the proof of sympathetic connexion. The growth of the staphyloma had been gradual from childhood. About puberty it was painful; then, and for the first time, the sight of the sound eye got a little dim. Soon after this a blow on the staphyloma produced a sharp attack of inflammation in it, attended with much pain, which increased the dimness of the other eye, producing also redness. From this period there had been a gradual deterioration of vision, with occasional paroxysms of pain and inflammation, whenever these have been manifest in the destroyed organ, and in spite of all the treatment adopted. There is some variation, as Mr. Walton points out, in the detail of these cases, that should be recorded. There may be no pain in the eye sympathetically affected, or it may exist with severity. There may be but slight intolerance of light, or a very great deal. The same with regard to inflammation. But deterioration of sight in some way or other, and some change in the iris are always present.

Shrinking and softening of the eyeball is common. The period of the sympathetic attack varies from weeks to years, but is generally much shorter in traumatic cases, and it is well to mention that there may be but very slight recent disturbance in the eye previously injured, but we believe that there is always some manifestation, and that pain or soreness under touch is always present. To sum up in a few words the effect of this idiopathic ophthalmia, it may be said that the retina suffers first, and then the whole of the ocular tissues, atrophy being the termination.

Now as to the treatment. The ophthalmic student will not find in the systematic treatises that treatment to which we are desirous of giving publicity. In Mackenzie's *Encyclopædia*, under the head of "Reflex or Sympathetic Ophthalmitis," from which we have already quoted, the treatment is thus given: "Rest, antiphlogistic means, the internal use of mercury, and the external application of belladonna, are the principal points of the treatment. These means, we have abundant proof, are not very successful. Still to relinquish these remedies would be wrong." After this he adds, that only in one case had he witnessed a complete cure of sympathetic ophthalmitis.

The most certain and direct curative effects follow the reduction or collapse of the staphylomatous eye, so that all causes of irritation in it, of whatever nature, are removed. Mr. Walton effects this by the taking away of a small part only of the staphylomatous mass, sufficient to allow of the escape of the altered contents of the distended tunica, and the removal, if requisite, of the lens and its capsule, if they be found cretaceous. The method adopted in this instance was just what Mr. Walton always executes, whether the staphyloma be of the sclerotica or of the cornea. The eyelids having been retracted, the most prominent part was transfixed with a curved cataract needle, and the piece cut away. Sometimes there is fluidity of the entire contents of the eye, in which case the tunics collapse at once, or fill with blood, which is then gradually absorbed; or, as in staphyloma corneæ, a considerable portion of the vitreous humour may be retained, and the eye only partly collapse. The less the reduction, the less unsightly the patient, and the better the stump for an artificial eye. There may be much bleeding, in fact there will be, except the caution which Mr. Walton strongly insists on be adopted,—namely, to apply a compress of cotton wool, and retain it with a bandage directly the excision is over; and then no blood at all is lost.

In a week from the operation a marked improvement began to be felt in the other eye, first in being able to bear the light, then in improved sight. The *muscæ* with which he used to be so much troubled were less numerous and less dark. In a fortnight, the last time we saw him, the eyeball was less vascular and the sclerotica less discoloured.

Reviews and Notices of Books.

Second Memoir on Excision of the Knee-joint; to which is Appended a Remarkable Example of the Power of Operative Surgery in Saving the same Articulation. By RICHARD G. H. BUTCHER, Esq., M.B.L.A., Surgeon to Mercer's Hospital, and Lecturer on Clinical Surgery, Examiner on Surgery in the Royal College of Surgeons in Ireland, &c. With Illustrations. Dublin: M'Glashan and Gill. 1857.

THE advocates of excision of the knee-joint will hail with satisfaction this second memoir of Mr. Butcher, and the entire profession will feel indebted to the author for having so honestly and carefully recorded the results of two years' more experience of this very interesting operation. The course pursued by Mr. Butcher in this present memoir is the same that was adopted in the former one. A notice of each case that has come to his knowledge, either through the medium of the public journals, or through private information, has been carefully arranged.

"The surgeon who operated; the hospital in which the patient was lodged; the sex and age of the person; the date of the operation; the result as to life; and the condition of the limb at the time the report closed."

In this manner fifty-one operations are collected as having been performed in the interval between May 17th, 1854, and October 11th, 1856, and for many of these cases, says the author,

"I am indebted to the pages of the medical press; but for many more, which have not appeared in print I am deeply indebted to the kindness of the operating surgeons in England and Scotland, who have most courteously answered all my inquiries."

Were it not, therefore, for the labours of the author in collecting all these cases of the operation, it is evident that much valuable experience in this department of surgery would be lost, and many interesting features that have been brought to light would have remained to have been learnt, perhaps to the disadvantage of the patient, and to the more limited success of the operation.

The arrangement of the table at page 40 is admirable; but if the exact nature and origin of the disease for which the operation was undertaken, in each particular instance, had been specially stated, we conceive it would materially increase the value of the statistics. In some of the cases, the records of which were sent to the author by the operators themselves, no strict allusion is made to the nature of the affection requiring the operation, which, perhaps, fails to cover a point upon which some disposed to deteriorate the value and objects of excision of the knee-joint might quibble.

It is interesting to glance down the columns of this bold array of cases, and to see the names of those surgeons who countenance the operation. Many connected with the general improvement of operative surgery will be found, men whose opinions carry immense weight, and whose example is imitated in every quarter of the globe

where surgery is practised. There is, however, an almost total absence of names, "familiar in our mouths as household words." The vast opportunities afforded by many of our large London hospitals have been allowed to pass, and an inertness to the value of this useful operation is sadly apparent. It is, however, to be hoped that the success which has attended the limited number of cases recorded, will stimulate those whose duty it is to treat, to the best of their judgment, the afflictions of patients whose comforts and advantages are paramount to the adherence to ancient doctrines and prejudices. It is, on the other hand, gratifying to find men of less note testing the value of this important proceeding for themselves, and departing in a somewhat disrespectful, though wise, manner from the dictates and precepts of their elders.

The results afforded by the table are criticised and investigated with fairness and impartiality. The author justly observes,—

"The review demands grave and serious consideration. The cause of death in each instance must be strictly investigated, as well as the reason of failure in others, demanding, as a *dernier ressort*, amputation of the limb. Out of fifty operations, death followed in nine instances, from which number one must be subtracted, Case XXIII., *partial excision*. Seven were subjected to amputation, and only one died. One case is said to be in a precarious way, and all the rest are either cured with useful limbs, or progressing rapidly towards the same result."

It is interesting to trace the cause of death in each of these fatal cases, and by doing so, a just appreciation of the value of the operation may be obtained.

The cases after excision, requiring amputation of the thigh, seven in number, are analysed with the same impartiality.

The author then "turns from the dark side of the picture to investigate those cases which have been successfully cured," and gratifying is it to find such encouraging success.

Certain statements were made by the author in his former memoir in favour of excision, and now again he has been enabled to adduce additional evidence to prove the correctness of those assertions.

Firstly.—It is satisfactorily proved "that the danger of excision of the knee-joint is considerably less than that attending amputation of the thigh."

Secondly.—By numerous examples it is again demonstrated that "the after utility and usefulness of the limb are vastly superior to any artificial substitute, no matter how beautifully contrived."

It is unfortunate to observe that the author is obliged to regret that in all instances due care has not been taken in the selection of suitable cases for resorting to the operation.

"I fear the panting after *clat* has charmed away some from the stern dictates of judgment; yet I trust this may never be the case; infinite mischief is done by such rashness. Not only is the life of the patient jeopardized by an operation which cannot secure a useful

limb for the purposes of life, but the operation itself is brought into disrepute, and open to the sarcastic criticism of those who know but little about it."

The evidence of several surgeons, who have seen their various cases some considerable time after they have discontinued attendance, proves that the condition of the repaired limb keeps pace with its fellow, and its growth is not checked by excision of the joint.

The vast importance of the subsequent treatment of the limb being properly attended to is very forcibly insisted upon; for "amongst the foregoing cases there are lamentable instances where it was not adhered to, and which, I trust, will appeal forcibly to the mind of every thinking man."

"Excision of the knee-joint," says the author, "has been objected to by some, owing to the tediousness of the convalescence." Some cases of very rapid recovery are adduced, which very considerably modify these objections. The remarks of Mr. Fergusson on this point, in a letter to the author, are much to the purpose. Mr. Fergusson writes,—

"No doubt the recovery has been very slow in some instances; but the same may be said of amputations. It is well known that stumps occasionally do not heal for six or twelve months, or even a longer date. Such, also, is the occasional history of resection of the elbow. Such, also, seems likely to be the case in certain instances of resection of the knee. I have, however, seen a patient, after this latter operation, stand on his own leg within three months, and within six months walk in a more efficient manner than I ever saw any one in the same time make use of an artificial limb. The wound is a very difficult one to heal, and I believe, from what I have heard, that the unfortunate result of some of the cases has arisen from defective after-treatment. When better surgery prevails in this respect, it is probable that we shall have more satisfactory results."

The author endeavours to prove that a more general adoption of the operation in military surgery will be awarded with success; but sufficient data is wanting to enable a positive opinion to be expressed on this point.

"Does an error in diagnosis, as to the suitability of a case for excision, debar the patient from a likelihood of cure by amputation?" One very interesting case, under the care of Mr. Hutchinson, is quoted at some length, to show that such an error does not debar the patient from the chance of ultimate cure by amputation.

A very important question, "Is amputation likely to be successful when performed some days after excision, owing to some unfortunate circumstance having arisen?" is discussed at some length. From the details of the seven cases in which it was expedient to resort to amputation of the thigh, owing to various circumstances, it would appear that the success is greater than could be expected. Six out of the seven instances made an excellent recovery.

Mr. Butcher naturally looks with satisfaction to this return as contrasted with the result of the wholesale lopping off of limbs for "abscess" and "ulceration of the cartilages."

We have reviewed this very admirable memoir at some length, and in so doing it is hoped that many surgeons who, perhaps, would not otherwise have become acquainted with its pages, will be induced to study its valuable details. The profession is deeply indebted to Mr. Butcher for this excellent addition to other papers on conservative surgery. The time has now arrived, as is seen by the table of names attached to the operation, when the dictates of teachers on many points must cease to be blindly received. It will not now-a-days suffice for a new operation to be condemned from a lecture table. Experience and facts must soon overturn empty assertions and deep-rooted prejudices, no matter how strongly supported.

The remarks and criticisms must be valued as emanating from one who is in every respect an admirable authority on many points connected with conservative surgery. It is to be hoped that Mr. Butcher will, before long, again record future experience, and be rewarded for his labours in this department of surgery, by the more general adoption and success of the operation.

The case of the cripple, Hugh Brady, operated upon by the author, in Mercers' Hospital, offers another illustration of the judicious application of surgery.

Stammering, the Cause and Cure. By the Rev. W. W. CAZALET, A.M. Cantab. Pamphlet. London: Bosworth & Harrison.

THIS work must be received with general satisfaction by the medical profession; for it at once takes this terrible infliction out of the hands of quacks, who have hitherto preyed like harpies upon the too anxious and confiding sufferers. The position of Mr. Cazalet as a member of a learned profession places the work out of the ordinary catalogue of those emanating from persons professing to cure stammering; and before even making ourselves acquainted with the contents, we were prepared to find the subject treated clearly and in a satisfactory manner. Nor have we been disappointed. The work, short in itself, contains all that is needful to be known. It is a concise exposition of the cause and cure of stammering, showing how this painful defect is caused,—a point never before sufficiently understood,—and giving rules for the cure. With regard to the cause of stammering, we cannot do better than give Mr. Cazalet's own statement:—

"The organs of speech may be divided into two parts—viz: those of sound and those of articulation, the lungs forming the motive power in the production of sound, upon which, when produced, articulation acts. In the case of a person speaking properly, these elements of speech ought to meet at a certain point, the rima or opening in the larynx, and there combine to form articulate sound or speech. This is the natural action and condition of speaking. In stammering, the breath is stopped in its passage from the lungs by the forced efforts made to articulate. No sound can therefore be produced, every effort tending more and more to pre-

vent the emission of sound and speech thus held in suspense. The difficulty increases with the exertion made; during these convulsions no sound can be produced, there is nothing for the articulation to act upon, and it is only when partial exhaustion takes place, and the articulating efforts relax, that the unhappy sufferer is at length enabled to speak. Having thus forced the organs into speech, in the anxiety to continue speaking as long as the power lasts, the lungs become exhausted of air, thus producing a collapse. In this state, the mere action of inhalation, during which the stammerer generally endeavours to articulate, is the proximate cause of succeeding spasmodic efforts."

In the cure of this defect, Mr. Cazalet proposes three principal remedial means, premising that reading is of course always to be resorted to. The first point is the attack of the sound—that is, "of placing the articulating organs in such a position as to modify the sound in the manner required." The second point is the management of the breath; and the third the pitch of voice. There are also other points alluded to, all evidently showing that Mr. Cazalet has made the voice a matter of deep study. It is not therefore to be wondered that something tangible is here produced. The position Mr. Cazalet holds is a sufficient guarantee that he has not undertaken what he cannot fully carry out, for the attempt would only recoil upon himself. On these grounds this work may be recommended.

Illustrations of the Pathology of Cancer. By JOHN ZACHARIAH LAURENCE, F.R.C.S. London: T. Richards. 1856. pp. 59.

THIS is a reprint, in which "the author has attempted to discuss some of the more difficult points in the pathology of a confessedly obscure and little understood disease." (*Preface.*) But "the pages" are certainly not filled with dry discussion: for French, German, and English medical literature, as well as the author's experience, have been largely drawn upon to "illustrate" the different forms of cancer which have been observed.

Mr. Laurence, who is known as the author of a prize essay on the Diagnosis of Surgical Cancer, has done good service in collating apposite cases referring to the rarer kinds of cancer, as the *navoid*, *villous*, *osteoid*, *enchondromatous*, *colloid*, *fibrous*, and *fibro-plastic*.

We would call attention to the *navoid* species, which is proposed by the author, though he does not consider its claims as settled. Müller calls it "*Carcinoma circoides*;" and Mr. Laurence adduces two cases published by the German physiologist, one of Cruveilhier's, and one which he observed himself at the Middlesex Hospital.

This species certainly wants further investigation; but if we look upon cancer as a constitutional disease, we may readily concede that the tendency may become manifested in vessels which have a kind of abnormal existence.

The second species to which the author attaches his name is the *enchondromatous*; and in support, two cases are recorded, which Mr. Laurence considers of the "most conclusive charac-

ter." (p. 21.) One is a case of enchondroma of the testis, which came under the care of Mr. Skey; the patient died after the operation, and secondary enchondromatous deposits in the lymphatic and vascular systems, as well as in the lungs, were found. The second is a case of enchondroma of the scapula, with secondary disease of the same kind found in the lungs after death. It is extracted from the *Gazette des Hôpitaux*, and was treated by M. Richet. The man died a fortnight after the operation, and at least thirty tumours were discovered in the substance and on the surface of the two lungs; the largest, the size of a nut, offered all the external characters of enchondroma.

Of *colloid cancer* the author does not treat, as he considers his experience of the surgical forms of this species too limited; but he adduces one of the most interesting and carefully-followed cases of *fibro-plastic cancer* which we have for some time met with. It refers to a little girl, six years old, upon whom Mr. Quain operated three times for recurrences of fibro-plastic tumours of the orbit. At the autopsy, secondary fibro-plastic tumours were found in the opposite parotid region, the dura mater, and the pleura. The child was altogether two years under observation. Mr. Laurence deserves much credit for the care with which he has collected the facts of this case; and histories, accompanied by accurate details respecting the microscopical examination of the tumours, both primary, recurring, and secondary, are worth pages of speculative writing on cancer.

Mr. Laurence adduces some figures and some arguments to show that cancer is not an hereditary disease; in this respect we are at issue with him, but cannot enter here into the merits of the question.

Another point of importance is treated by the author in a subsequent chapter,—viz, whether there is any connexion between consumption and cancer. He does not venture upon conclusions, but states that of fifty-one cancerous patients which have fallen under his own observation, no fewer than fourteen knew of a parent, a brother, or a sister, who had died of phthisis.

Want of space prevents us from following the author in the concluding chapters "*On the Relation of the Secondary to the Primary Deposits of Cancer*," and "*On the Nature of Cancerous Disease*;" and we must sum up this brief notice by saying that Mr. Laurence will assist science by persevering in his endeavours to elucidate by facts a most distressing and destructive affection.

An Exposition of the Signs and Symptoms of Pregnancy; with some other Papers on Subjects connected with Midwifery. By W. F. MONTGOMERY, A.M., M.D., Professor of Midwifery in the King and Queen's College of Physicians in Ireland, &c., &c. Second Edition. London: Longmans, 1856.

HAD this admirable and classical work now appeared for the first time before the world, we

should have been guilty of great injustice to the author, and of no less injustice to the scientific public, in having delayed so long as we have done the publication of this review. But we have an easy conscience in the matter. The fame of this book, and the reputation of the author, are equally beyond the need of editorial introduction and the reach of criticism. It was, therefore, enough for the publishers to announce a second edition, in order to excite the curiosity of the learned in all countries, and to command a ready sale. When the accomplished Professor tells us that "the present treatise, although only another edition of a work already published, may be with truth regarded as a new book; that every sentence of the former has been carefully revised; and that the quantity of new matter now added is more than equal in amount to the whole contents of the former edition," we see, however, ample reason to congratulate the medical profession upon the gain of fresh stores of knowledge.

No doubt many important additions have been made to our knowledge of the physiology and pathology of the pregnant woman since the issue of Dr. Montgomery's first edition. The bearing of these accessions upon the particular subject of this book made it necessary to revise and reconsider many, if not all, of the conclusions he had expressed. With equal candour, patience, and acuteness, this task has been accomplished; and not only are the researches of others fairly weighed and recorded, but, as might be expected, the rich experience of the author has supplied a large share of the most valuable additions. It is perhaps, the highest testimony that can be adduced in proof of the candour, extensive learning, calm judgment, and scientific sagacity displayed by the Professor in his first edition, that subsequent researches have imposed upon him the necessity, not of materially modifying the opinions he then expressed, or of reversing the doctrines he then taught, but of adding to the bulk and value of his new edition by the accumulation of fresh illustrations that confirm their truth. The doctrines are not changed; they are made to rest upon a firmer and broader foundation.

For the benefit of those who have not already consulted the new edition for themselves, we may briefly recapitulate the points which have been thus enriched by the more recent researches of others, and the extended experience and reflections of the author.

The preliminary chapter, "On the State of the Female during Pregnancy," has been nearly doubled; numerous additions have been made to those parts which treat of the increased susceptibility of the nervous system and mind of the pregnant woman, especially as regards impressions made by external objects; and the influence thus exercised upon the physical organization and mental constitution of the child. Under this section, Dr. Montgomery adduces some remarkable evidence to prove that mental emotions of the mother may act as a potential cause in producing malformations in the fœtus. Two instances re-

lated by him seem to be beyond all cavil. His remarks upon this question are equally interesting and convincing.

Obstetric auscultation has been treated at much greater length. The chapter on this subject now embraces all that is known about it, and contains an admirable appreciation of the advantages to be derived in obstetric diagnosis from its application.

That singular condition of the female system known as Spurious or Simulated Pregnancy has received much attention, and much useful information is now imparted concerning it.

The question as to the Period of Human Gestation has always engaged the earnest attention of the scientific obstetrician. Its great physiological interest, and, still more, its deep social importance, render it incumbent upon us to spare no labour, research, or thought in the endeavour to elucidate it. To this question Dr. Montgomery has accordingly devoted his best efforts. He has addressed letters to medical men in Great Britain, France, Germany, Norway, Denmark, Sweden, and America, requesting information. The conclusions now put forth may be regarded therefore as the result of a larger amount of authentic facts, maturely weighed, than has been accessible to any previous author. The new evidence and masterly summing up support the proposition that gestation may be normally protracted beyond the usual period of ten lunar months. The essay upon this question is by far the most interesting, the most complete, and the most authoritative that has yet been published.

The bearing and value of the recent researches on the state of the blood and urine in pregnancy are discussed, a full *résumé* of what is known on the subject being introduced.

The chapter on the Examination after Death has been greatly enlarged, by a much more extended account of the corpus luteum, and its value as an evidence of conception. Two specimens of unusual interest are described and figured: one where that body was found very perfectly developed in connexion with uterine hydatids, without any fœtus; and another in which there was only one corpus luteum in a case of twins. The interest concerning the corpus luteum has somewhat lessened of late years, since the promulgation of the ovular theory of menstruation. If every menstrual act be really dependent upon, and accompanied by, the discharge of an ovulum, the presence of a corpus luteum could hardly be regarded as conclusive evidence of pregnancy, unless, indeed, a clear and constant difference could be shown between the corpus luteum resulting from the extrusion of a "menstrual" ovulum and that connected with an impregnated one. The conclusion of Dr. Montgomery is a vindication of the essential value of the true corpus luteum as a sign of conception. The professor says:—

"I am not aware that any one has ever recorded, from actual observation, an instance in which there was found unequivocal proof of conception, such as an ovum in utero, or a fœtus expelled, and no corpus luteum in the

ovary. In the numerous examinations which I have made or heard of, I have never met with a single instance of the kind. The accuracy of Haller's second proposition is fully confirmed by my observations—viz., that the true or perfect corpus luteum is never found in virgin animals; and I have never omitted an opportunity of examination for more than twenty years."

The Ovular Theory and the evidence upon which it is supported are then reviewed with singular clearness and comprehensiveness. The author admits that ovules may be extruded during menstruation and independently of conception; but shows conclusively that the resulting *corpora lutea* differ in essential characteristics from those of pregnancy.

That remarkable and long-mysterious phenomenon, the Spontaneous Amputation of the Fœtal Limbs in Utero, has well exercised the unsurpassed pathological discrimination of the author. The facts he has collected, and the arguments based upon them, fully set at rest the long disputed question as to the mode of production of these deformities. Every succeeding fact now appears as a new illustration of the explanation enunciated by the professor in his first edition,—namely, that these intra-uterine amputations are effected by the gradual strangulation and absorption caused by the tightening of false membranes around the limbs.

Under the head of "Signs of Delivery," some precise measurements are added to those formerly given, of the size of the uterus at stated intervals after delivery, taking place at different periods of gestation; a kind of knowledge in which, although confessedly of the greatest value, there is an acknowledged deficiency in our medico-legal works. Under the same head, the fatty degeneration of the uterine substance after delivery, and its entire reconstruction, has now received a notice proportionate to its interest and importance.

In this sketch we have surely said enough to satisfy our readers that the second edition is scarcely less interesting and valuable, on account of the new matter introduced, than was the first edition itself. It will long remain the standard work and authority upon the subject of which it treats. As a classical work, rich in facts, clear and logical in arrangement, sound in argument, modest and attractive in style, it will ever remain a solid monument to the reputation of the brightest ornament of the Great Irish School of Obstetrics.

On the Diseases of the Bladder and Prostate Gland. By WILLIAM COULSON, Surgeon to, and Lecturer on Surgery at St. Mary's Hospital. Fifth Edition, revised and enlarged. pp. 640. London: Churchill, 1857.

SEVERAL years have elapsed since the publication of the previous edition of the present work, and during this period all matters relating to pathology and surgery have been steadily advancing in this and other countries. As a part of this advance, considerable improvements have been made in the investigation of malignant affections of the bladder. Lithotripsy has been rendered

more perfect in practice, and made of wider application. Vesico-vaginal operations have taken a recognised place in surgery; and increased light has been thrown upon many other subjects connected with this department of practice.

In Mr. Coulson's work, we observe that the subject of Malignant vesical diseases has been treated of with great care and minuteness. It has hitherto been assumed that the symptoms of these affections are obscure, and their diagnosis almost impossible. But it has been shown by Mr. Coulson that malignant disease of the bladder, after existing for a certain period, is attended by signs which unmistakably reveal the true nature of the disease—namely, the presence of cancer cells in the urine. Considerable stress is also laid by the author upon the occurrence of hæmorrhage, which is rarely if ever absent in these cases. Mr. Coulson relates many interesting instances in which the diagnosis was made out in great part by the aid of the microscope. This point relating to the diagnosis of cancer of the bladder, which originated with Mr. Coulson, has been confirmed by the observations of Dr. Laakester, and more recently by those of Dr. Owen Reeves in his Gulstonian Lectures.

A very important and complete chapter is devoted to the subject of Lithotripsy. This is enriched by the results of the author's extensive experience as a lithotritist, and contains a full account of the labours of other surgeons who have contributed towards the improvement of the mode of operating. It has now clearly been demonstrated, that lithotripsy is, under certain conditions, less dangerous than lithotomy. Mr. Coulson has taken up the subject of the comparative dangers of the two operations, and submitted it to a rigorous analysis. His own method of operating is deserving of the attention of every practical surgeon. From this part of the work, which is illustrated by some admirable wood-engravings, we extract the following passage, which comes after the preliminary steps of the operation:—

"The lithotrite being in the bladder, our next step is to find and seize the stone. There is some difference of proceeding as applied to large or small calculi. When the stone is of moderate size, there is seldom much difficulty in this part of the operation. The calculus is soon found on the floor of the bladder, or at the side towards which the patient may be inclined. While seeking for the stone, the instrument is to be kept on the same plane as when it entered the bladder, and the blades are to be separated from each other about half or three quarters of an inch. The instrument is held lightly between the thumb and fingers of the left hand, which are applied to the square and round portions of the female blade, the back of the hand being directed upwards; whilst the handle of the male blade is held by the thumb and first two fingers of the right hand.

"The instrument is then made to revolve slowly, with the blades a little open. This revolution is effected by movements of the thumb and two fingers of the left hand, as if we were revolving a pencil or any cylindrical body between them. It is made at first to one side—say the right, and while this is being done, the male branch is at the same time gently moved forwards and backwards several times, to the extent of half or three quarters of an inch. The object of these movements is,

that the male branch may meet the stone, which it generally does while traversing over the different spaces. If the stone be not caught in this situation, the instrument is rotated, in the same way, on the opposite side of the bladder, the male blade being moved backwards and forwards as before. The whole of the floor of the bladder, with the exception of its central part, is thus explored, and if the patient has been a little inclined to the right side (a position I usually adopt), the stone will, in most cases, be caught with ease on the right side of the floor of the bladder.

"Let us suppose, however, that the calculus is not discovered in either of the situations mentioned; that it lies in the centre of the floor, or just behind the prostate, which is probably somewhat enlarged. In a case of this kind, an attempt may be made to dislodge the stone by elevating the pelvis more than in ordinary cases. The mere change of position may displace the calculus, and enable us to seize it. Should this, however, fail, we must have recourse to the following proceeding: The revolution of the instrument, which in the two cases formerly spoken of was such as only to command the sides of the floor, is continued until its point and the concave surface of the blades are directed immediately downwards; at the same time the handle of the instrument is slightly elevated, so as to bring the end into the hollow behind the prostate, and thus command the central portion of the floor of the bladder. The male branch is again moved to and fro, as before, until the stone is caught or fished up from the depression in which it lay, behind the prostate. The manipulation is easily and safely performed, and M. Civiale has recourse to it in almost every operation which he performs, in order to seize any fragments that might have escaped the instrument during its lateral revolutions. It is particularly necessary when the calculus is lodged in a depression behind the prostate."

Our space will not permit us to examine this interesting chapter more in detail, but we must mention one other point in connexion with the operation. For several years past, Mr. Coulson has been directing the attention of surgeons to the frequency of Pyæmia after surgical operations, and he has shown that this complication is the cause of death in many cases both of lithotrity and lithotomy. Our standard surgical works are silent on this subject; yet we are convinced the observations of Mr. Coulson, founded on his own extensive experience, will be confirmed, when the causes of death are investigated with care and accuracy. The return of operations performed in the London hospitals in the last three months of 1856, include thirteen cases of lithotomy; of these, three terminated fatally, and two of the deaths arose from pyæmia. During the same period, six operations for lithotrity were performed; of these, one proved fatal, and here also the cause of death was purulent infection of the blood.

We will not follow our author further than to express our very high opinion of the general merits of the present work. The manner in which he has pursued the investigations upon which it is founded redounds in the highest degree to his credit as an hospital surgeon and teacher of surgery.

Records of Longevity: with Introductory Discourse on Vital Statistics. By THOMAS BAILEY. London: Darton and Co. pp. 899.

How long does man sometimes live? is a

question which has frequently occupied attention. Prior to the Deluge, according to Scripture, the span of human existence was very much protracted. Thus Adam, our first progenitor, lived 930, Seth 912, and Mahalaleel 894 years; but the great patriarch of all antediluvians was Methuselah, "whose days were 969 years when he died." Subsequent to the Flood, the period of man's pilgrimage on earth became much diminished, very few persons being ever recorded in holy writ who attained a quarter of the very great ages just named; whilst in more modern times, or during the Christian era, instances of either men or women living beyond a century and a half are exceedingly uncommon, where the true age could be authenticated. Nevertheless, classic authors have reported various examples of frail humanity having almost approached, in length of days, the cases which occurred previous to Noah's entry into the ark, of which Pliny the younger may be quoted as an apposite authority. After enumerating some very old persons who lived in former periods of history, he specially adds, when discussing the subject:—"Alexander Cornelius referit Dandonem quendam in Illyrico CCCCC annos vixisse. Xenophon in Peripolo maritimum regem Litrini CCCCC; atque ut paricè meritis, filius ejus DCCC (800) vixit." Subsequently, other writers, both ancient and modern, have investigated the interesting question of longevity, the most recent publication of all being the work whose title heads this article, and which deserves at least some passing observations.

Mr. Bailey's volume may be fairly called a mere compilation, and contains nothing new or original. It is, however, a good collection of numerous illustrations of persons who had passed the age of 100 years and upwards; although some remarkable cases, under that period, have been likewise included. All are alphabetically arranged, and hence become of easy reference. Had classified tables, indicating the sexes, ages and years of birth been further appended, the author's researches would have proved much more useful to subsequent investigators, while thus showing, by the different facts he has collected, during what period patriarchs proved most frequent, or whether very old men oftener existed than the opposite sex; besides various other points of inquiry equally interesting. Irrespective of such deficiencies, the author's production still must have cost him much labour, and it hence really deserves being placed in the library of those who pursue analogous studies. The introductory discourse also merits perusal; and amongst other remarks we would quote the following as deserving attention:

"A few slothful men have attained to extreme old age, and so have a few gluttons and drunkards, or, at least, hard drinkers; but for the most part, and in an incomparably greater proportion, long lives have been distinguished for their sober and industrious habits."

Again, speaking of the greater number of old women usually met with than men, he states—

"How can it be wondered at, seeing that the former often spends the whole of his time in smoking tobacco,

dozing in an easy chair, or taking an unnecessary quantity of stimulating beverages, whilst his temperate, active-minded partner is busily employed in the discharge of her household duties."

This is true, and quite consistent with daily experience, while correct observers will admit the justice of another remark by the author, viz:—

"It may be safely doubted whether a single instance can be found, of a man of violent and irascible temper, habitually subject to storms of ungovernable passion, who has arrived at a very advanced period of life."

These very seldom, if ever, verify according to our opinion, the well-known saying of having "mens sana in corpore sano," but almost invariably the reverse.

Notwithstanding the numerous instances which have been reported, on apparently reliable evidence, of individuals who truly attained very advanced ages,—nay, were confidently classed amongst centenarians, various writers of repute still consider that patriarchal examples in the human race are of most rare occurrence. Thus, according to remarks recently published in a literary contemporary by Dr. Webster,—known for his acquaintance with medical statistics,—no case has yet been recorded at either of twelve of the largest and longest-established insurance-offices in London beyond ninety-seven at death; nor does any one whose life is at present insured exceed that period; there was however, a man, lately dead, in Scotland in his 103rd year, to whom Government has granted an annuity, and he, therefore, constituted a real live centenarian.

Miscellaneous Correspondence.

"Audi alteram partem."

THE EXCITO-SECRETORY SYSTEM; CLAIMS OF HENRY FRASER CAMPBELL, M.D., OF AUGUSTA, GEORGIA, U.S.

By MARSHALL HALL, M.D., F.R.S.;
OF THE INSTITUTE OF FRANCE; ETC., ETC.

To the Editor of THE LANCET.

SIR,—I have received a printed letter, addressed to me by Dr. Campbell, of Augusta, Georgia, U. S., stating his claims to priority in the detection of the excito-secretory sub-system of the spinal system, and requesting me to use my influence to obtain its insertion in THE LANCET. May I therefore beg that it may, if possible, appear in that publication?*

"A claim of Priority in the Discovery of, and also the naming of the Excito-Excretory System of Nerves. By HENRY FRASER CAMPBELL, M.D., of Augusta, Georgia, U.S.A., Member of the American Medical Association, Professor of Comparative Anatomy &c., in the

* Dr. Campbell's letter consists of sixteen dense octavo pages, is very diffuse, and contains needless repetitions, as the whole of p. 7—9, and p. 11—13. We have therefore inserted it in a form suited to our space. We have omitted no important paragraph.—[Ed. L.]

Medical College of Georgia, and Senior Editor of the Southern Medical and Surgical Journal.

"EXCITO-SECRETORY SYSTEM OF NERVES."

"LETTER TO DR. MARSHALL HALL, OF LONDON.

"Augusta, Georgia, U.S.A. March 2, 1857.

"MY DEAR SIR,—In the number of the London LANCET, re-published in this country for March, 1857, I have just read a paper from your distinguished pen; and in this paper you announce a system of Excito-Secretory nerves, in the following connexion and in the following terms:—

"In a memoir read at the Royal Society in February, 1837, I announced the existence of an excito-motory system of nerves.

"I believe I may now announce a system or sub-system of excito-secretory nerves, not less extensive."

"As the above announcement is here made in close relation with a discovery long admitted to be your own—viz., that of the excito-motory system of nerves, and inasmuch as in your subsequent remarks you attribute the proposition to no one else, I am left to infer that it is deemed by you an original deduction from the admitted facts of anatomical and physiological science, as developed by observations and experiments during the last and the present century. Some of these last—viz., the experiments of M. Claude Bernard of Paris—you adduce, with the apparent intention of fortifying the views you here express.

"Finding in none of your communications upon this interesting topic, any mention made of my name or of my records, I am, with regret, impelled, from considerations of courtesy to you, and of justice to myself, to call your attention to the registration of my own labours in the same important field. I will, however, first direct you particularly, though briefly, to several portions of your own communication, in order that they may be placed in convenient juxtaposition with my own records, without giving the trouble of each time referring to the pages of THE LANCET:

"But the most remarkable proof of the doctrine which I am endeavouring to unfold is furnished by the brilliant discovery and skilful experiments of M. Cl. Bernard"—

"And you here refer to his well-known experiments on the pneumogastric nerve in its relation to the secretions of the liver, published in his Lectures on Experimental Physiology during the winter session of 1854 and 1855.*

"In the earlier part of your communication (March, 1857), you thus announce the addition of this, as you suppose, *new*, sub-system, to what you term the 'Diastaltic Nervous System,' the term 'henceforth' apparently being used to date the initial moment of an era:

"Henceforth the diastaltic nervous system must be divided into two sub-systems:

I. The Excito-motory.

II. The Excito-secretory.

"The former is extended to the entire muscu-

* Leçons de Physiologie, p. 325. Paris, 1855.

lar system; the latter is diffused over the general system as the blood is diffused over the system.'

"Again, in reference to the *pathological* relations of the *excito-secretory* system, you remark,—

"The *pathology* of the *excito-secretory* sub-system remains to be investigated and traced. A partial keen current of air falling on *any* portion of the skin may induce inflammation in *any* susceptible internal organ. An extensive burn or scald is apt to produce pneumonia.'

"And as my last quotation for the present:

"But here I close this brief communication. My present object is only to *draw the merest sketch* of this *vast subject*, which demands a most extensive and cautious series of experiments and observations. The efforts of many labourers, through many years will be required fully to develop the *two* sub-systems of the diastaltic nervous system.

"I propose shortly to treat this important subject at a greater length, and with more details.'

"Now, my dear Sir, by a reference to the following series of records, running through a period of nearly seven years, you will at once perceive that the *excito-secretory* function of the nervous system has been the subject of earnest and diligent inquiry, and also of *plain record*, with me, for a length of time far anterior to that at which either yourself or M. Bernard had published anything on the subject.

"You will herein also perceive that this system of nerves has been plainly recognised and set forth, as considered in *its relations to pathology*, through which, indeed, its *physiology* has been mainly deduced by me. And lastly, that this system of nerves, before plainly stated and amply discussed, was, as early as May 5th, 1853, in the presence of the American Medical Association, the highest tribunal in the medical sciences within my reach, *publicly named by me* the *Excito-Secretory*, and that, too, in juxtaposition with, and contradistinction to, your own discovery—viz., the *Excito-Motory* function." (pp. 1-8.)

"June, 1850.—Permit me, now, respected Sir, to refer you to the pages of the *Southern Medical and Surgical Journal* (new series,) vol. vi. No. 6, June, 1850. Part I,—Original communications. Article XV. page 321. You will in this place find the paper just cited, published—viz., 'An Essay on the Influence of Dentition in producing Disease. By Henry F. Campbell, M.D., Demonstrator of Anatomy in the Medical College of Georgia.' Here you will find that I have in the beginning sketched prominently the two orders of phenomena which occur during the period of dentition,—viz., the *convulsive* and the *secretory*, explaining the first easily enough by a reference to the principles of the *excito-motory* action laid down by yourself; whilst the other set of phenomena I presented in such a manner as that, from them, the *excito-secretory* function of the nervous system became an *obvious* and an *unavoidable deduction*: by this means mutually establishing a

physiological principle before scarcely ever broached or hinted at; and, in the second place, leaving no chance to escape the necessary admission that this set of phenomena, before perfectly inexplicable to the profession, could only be rationally interpreted by the admission of that very physiological principle. In doing this, the 'two sub-systems,' as you now term them, were, throughout, kept in *close relation*, but in *decided contrast*, the one being used occasionally, it is true, to illustrate the other, but never for a moment becoming *confounded* with the other: thus—'Now let us inquire how far these phenomena are dependent upon dentition; and ANALOGY with the *EXCITO-MOTORY* system will much assist us in our argument. We have seen that local irritation can, through this system, produce convulsions by the reflex function of the nerves, the sensitive branches of the fifth pair becoming excitator to the *motory-spinal* nerves; and so, may we justly infer, do these same branches, under certain circumstances, become *excitator* to the *SECRETORY* filaments of the *sympathetic*, distributed so abundantly to the intestinal canal by a transmission of this irritation through the various ganglia with which it is connected.

"Without further remark at present, I will lay before you that portion of this Essay which embodies my first record upon the *excito-secretory* function of the nervous system:—

"From the above considerations we are induced to conclude that the *convulsions* are often produced by the irritation of dentition, and can be directly referred to this as the sole cause.

"We arrive now at a point in this somewhat obscure and much disputed question which perhaps, affords more ground for doubt than any of the foregoing,—viz., a consideration of the *pathogenic influence of dentition in the cholera infantum, or diarrhoea*, so uniformly co-existent with this process. Unlike the convulsions, the analogy between which and certain known and established phenomena of the *excito-motory* system, which it is only necessary to refer to, and their operation is plain and intelligible, this new set of symptoms, if we refer them to the process of dentition, requires us to look yet deeper into the mysteries of our nervous organization, and to *venture still one step further* on the *terra incerta* of sympathetic interpretation.

"In order to apply our arguments, let us hastily review the foregoing investigation, that they may bear more fully upon this part of our question; and, firstly, we have seen that inflammation, pain, and irritation are produced *locally* by the process of dentition, evinced by restlessness, biting, &c. Secondly, we have seen that this local irritation can be transmitted by *excito-motory* influence to other and distant parts of the body, manifested by convulsions. We have also endeavoured to corroborate this latter opinion by a reference to the order of succession in the nerves in which this irritation occurs, and also by a comparison of these phe-

nomena with other well-understood and established analogous phenomena. Heretofore we have had to deal entirely with functions of the cerebro(?) spinal system of nerves; but to account for this second and more obscure part of our problem, we must look in vain to any direct anatomical connexion between the fifth pair and the rest of this system of nerves. We are forced to seek out other connexions, indeed somewhat more intricate and indirect, but fortunately no less legitimate and definable. We have now to consider a set of organs which, unlike the voluntary muscles, have no connexion, or rather, we would say, emphatically, they have a connexion, though indirectly, with the cerebro-spinal system. We mean the abdominal viscera, which we know are almost altogether supplied from the great sympathetic system of nerves. Now, in the prosecution of our inquiry it becomes necessary, to the elucidation of the question, to trace out the same connexion between the fifth pair and the sympathetic or secretory, as we did between the fifth pair and the cerebro-spinal and motory nerves; and then, should we succeed, we will briefly inquire into the bearing which this connexion and its possible results may have upon our question."

"At the fifth annual meeting of the American Medical Association (1852), held in Richmond, Virginia, not being present myself, I was appointed by a special committee, to prepare an essay on the subject of 'Typhoid Fever,' which essay was read before that body in New York, in May, 1853. In this paper I took occasion to consider carefully the ganglionic system, in the support of the position therein assumed, that all typhoid fevers were manifestations of disease through the secretory system of nerves. While thus engaged, my attention was called to certain experiments performed by Mons. Claude Bernard, of Paris, and made public through the *Gazette Médicale*, and translated in the *New Orleans Medical Register*, together with his deductions therefrom.

"On examination, finding that they contained what at that time appeared to me the germ of a theory similar to mine, recorded in June, 1850, though he refers to them as 'a set of phenomena identical with those occurring in the cerebro-spinal system of nerves denominated excito-motory by Dr. Marshall Hall,' while I had deduced this excito-secretory system (in 1850), saying 'analogy with, the excito-motory system will much assist us in our argument;' and further, inasmuch as this distinguished gentleman's report presented itself to my mind at that time, somewhat in the form of an announcement, I deemed it advisable to appeal to our National Medical Congress, in the following brief memoir, *praying permission to record before them, MY CLAIM TO PRIORITY*, and also my protest against the palm of originality attaching to Mons. Claude Bernard:—

[* Abstract from the Transactions of the Ameri-

can Medical Association: Meeting held in the City of New York, May 3rd, 1853.]

"Dr. CAMPBELL, of Georgia, submitted a paper on a question of priority in reference to the discovery of the reflex relation subsisting between the cerebro-spinal and sympathetic system of nerves.—See *Minutes of Sixth Annual Meeting* vol. vi., p. 89."—(pp. 9, 10.)

"In conclusion, let us define the position which, at the end of our investigation, we feel warranted in assuming. It is the following:—That in the anatomy and physiology, as well as in the dependent analogies of the process of denervation, we feel ample ground for the opinion that the diseases pertaining to this period may be dependent, and, in many instances, are entirely so, upon the local irritation attending the process, being transmitted through the cerebro-spinal system of nerves, producing convulsive diseases in the motory apparatus, or through the sympathetic, causing derangement of the secretory organs, particularly of the alimentary canal, by the way which it exercises over the arterial system from which these secretions are eliminated."

"In the above brief quotation, it will be observed that the doctrine of the reflex function between the cerebro-spinal and sympathetic systems is plainly enunciated, and not only is the physiological fact noted, but we there also have surmised the transmission of permanent irritation, or of paralysis from the cerebro-spinal to the sympathetic system, giving rise to various aberrations in nutrition and secretion. This opinion we have held for years, teaching to our classes that there existed between the cerebro-spinal and ganglionic system of nerves, a relation similar to that between the sensitive and motor branches of the cerebro-spinal, and which Marshall Hall terms excito-motory; while we have termed that between the cerebro-spinal and sympathetic systems excito-secretory"—(p. 13.)

"And now, my dear Sir, I will close this already too prolonged communication: as courtesy to you, and justice to myself, were professedly the instigating causes of its inditement, I do most sincerely hope, that in the too earnest establishment of the latter, I have not at any moment even appeared to have forgotten the former.

I am, Sir, with feelings of great respect,

Your obedient servant,

"HENRY F. CAMPBELL

"To Marshall Hall, M.D., F.R.S., &c."

It would be unjust to deny that Dr. Campbell has the merit of having first called attention to the excito-secretory sub-system in the year 1850, and that he imposed this very designation in 1853.

So far Dr. Campbell's claims are undeniable, and I would say "palmam qui meruit ferat."

But Dr. Campbell's observations will be seen to be limited to pathology, and indeed to dentition, and are the result of mere observation, with an occasional glance at physiology; no physiological

instance of the latter being adduced distinctly or emphatically.

Now M. Claude Bernard's labours are *experimental*, and of the most recondite character:

"If the pneumogastric nerves be divided in the neck, the formation of sugar in the liver is arrested; if the *lower* portion of these divided nerves be galvanized *no* effect is produced; *but* if their *upper* portion be galvanized, the formation of sugar is restored!"

The fact that a profound interior physiological secretion is one of reflex action is demonstrated!

Other *physiological instances* are freely adduced.

I arrive at this conclusion: the *idea* and the *designation* of an *excito-secretory* action belong to Dr. Campbell, but his details are limited to pathology and observation. The elaborate experimental demonstration of reflex *excito-secretory* action is the result of the experimental labours of M. Claude Bernard. And now I say—"suum cuique."

My own claim is of a very different character, and I renounce every other. It consists in the vast *generalization* of *excito-secretory* action throughout the system:

"There is, perhaps, not a point in the general cutaneous surface in which tetanus—an *excito-motor* effect—may not originate; there is scarcely a point in which internal inflammation—an *excito-secretory* effect—may not be excited."

Every point of the animal economy is in *solidarité* by a reflex *excito-secretory* action with every other!

I here observe that this *excito-secretory* action cannot be designated *dia-staltic*. It is certainly *dia-energetic*; but it does not assume the form expressed by the Greek term, *σπασμ*. A new designation is required, and I propose at once the plain and simple one of *dia-centric*. Thus the in-going nerves are *centripetal*; their influence traverses the spinal marrow, and is *dia-centric*; it is reflected along *centrifugal* nerves.

One remark more. The *diastaltic* system extends to the internal muscular organs, as well as the external. I would therefore speak of

1. *External diastaltic action*, and of
2. *Internal diastaltic action*.

The former has been amply elaborated and traced in my various publications; the latter remains for new investigation.

The former applies to all orifices and exits, and all tubular structures leading to them; the latter to all internal muscular organs—the heart, the stomach, the intestines, &c.

I trust Dr. Campbell will be satisfied with my adjudication. There is in the *excito-secretory* function, as applied to pathology, an ample field of inquiry for his life's career, and it is indisputably—*HIS OWN*. He first detected it, gave it its designation, and saw its vast importance.

I am, Sir, your obedient servant,

MARSHALL HALL.

"LUMBO-SACRAL MISERY."

To the Editor of THE LANCET.

SIR,—Under this head I shall endeavour to include a large set of cases, very various, probably, in regard of the actual seat of the disorder, but having one well-marked symptom in common—viz., lumbo-sacral and pelvic distress.

Five years of dispensary practice have so frequently brought this affection under my notice, that I am very desirous of gaining further light upon it, and I shall therefore be glad, if other members of the profession will contribute their views and experience on the subject.

The term "*lumbo-sacral misery*" may appear to be a very loose and general one; and yet I cannot find another which so well symbolizes, as it were, and sums up the group of symptoms, whose nature and treatment it is the object of this paper to elucidate. They occur in married and unmarried adults of both sexes; but more commonly in females and celibate men, and whichever be the organ at fault, it is clear that a sort of reflex spinal irritation exists, the lower segment of the medulla constituting one, and some abdominal, or pelvic organ, another link in the chain of disordered sensation. The symptoms common to all the cases are these: a sense of heat and weight; with more or less perspiration about the lumbo-sacral region; aching or weariness of the lower limbs; flushes of heat in the course of the thighs and calves, or suddenly all over the body, attended with some degree of nausea, and tendency to fainting; dyspepsia, with irregular evacuations, which are alternately scybalous and mucous; a highly-exalted susceptibility to impressions of every kind; an unwonted timidity and shyness; a causeless and indefinable dread of some sudden seizure, and a feeling of general debility and enervation, amounting, at times, to almost complete helplessness—in short, lumbo-sacral misery, general enervation and dyspepsia, with hypochondriasis, are found in all cases, but are *modified* according to the organ or organs chiefly affected. In some cases, one would be disposed to refer the symptoms to the rectum and colon; in others, to the reproductive organs; and in others, again, to the medulla itself, or to an over-taxed and jaded brain. There is, no doubt, in this, as in most other disorders, a plurality of causes; but one organ, or set of organs, will generally be found to be more especially at fault, and to determine the peculiarity of the case. It will be the object of my next paper to examine these modifications and peculiarities, this being but a brief summary, or comprehensive view, of a very extensive class of disorders.

As regards their treatment, I feel certain much mischief is done by quacks and specialists, in their zealous use of the speculum, caustic injections, bougies, and other local appliances, and that these affections are amenable to rational general management. My own mode of treatment consists of the cold hip-bath; very moderate, carefully-regulated exercise; much sleep; fresh, pure air; a diet com-

posed chiefly of bread, butter, meat, chocolate, and Bass's ale, or sherry, cheerful society, innocent recreations, the intelligent observance of religious duties, and the avoiding of crowded assemblies, and all strong excitement. Of all medicines I have found zinc, taken in the following form, the most useful:—Sulphate of zinc, one grain and a half; extract of hyoscyamus, two grains and a half; camphor, one grain. Mix, and make into pills, one to be taken three times a day.

I am, Sir, yours truly, A. B.
City, June, 1857.

THE MARSHALL HALL METHOD OF TREATMENT IN ASPHYXIA.

DROWNING IN SOAP-SUDS.

To the Editor of THE LANCET.

SIR,—When Dr. Marshall Hall first published in your columns, on April 12th, 1856, his Ready Method of treating Asphyxia, I felt so convinced of the soundness of the views then promulgated, that I resolved to test them practically on the first occasion which should present itself. I had not to wait very long for an opportunity of doing so.

On the 31st of May, 1856, I was sent for express to visit a female child, aged two and a half years, said to have been drowned in a tubful of soap-suds. I had a distance of fully two miles to ride, and started with a feeling that my labour would be all in vain. Half an hour must at least have elapsed from the time the child was discovered in the water until I reached the spot. On arriving, I found the child stripped of her clothes, wrapped in a piece of flannel, reclining on her mother's knee, and people assiduously applying warm flannels to various parts of the body, accompanied with frictions. The child occasionally gave a sort of gasp or sob, with a slight quiver of the body; the eyes were projected, fixed, and the pupils dilated; the pulse could not be felt. The postural movements, with upward frictions, as recommended by Dr. Marshall Hall, were immediately commenced, and after forty minutes' continuance, respiration became more regular, but not so satisfactory as I could wish. The child began to moan occasionally, and attempted to cry; the pulse could be distinctly felt, though irregular; but the eyes continued in the same immovable state, with dilated pupils, as when I arrived. In addition to the postural movements, &c., &c., cold water was dashed over the head, face, and various parts of the body. The child was then placed in a tub of hot water, to the middle of the body, a cloth wet with hartshorn applied over the region of the heart, and cold water poured upon the head. Instead, however, of improving, the breathing became more irregular and spasmodic in its character. The child was therefore, after being five minutes in the bath, removed, and the postural movements repeated and persisted in for half an hour. The

breathing became more regular and natural, the pulse more distinct and firmer, yet the eyes continued in the same state as when I arrived. It was then evident that, besides the carbonic acid which might be retained in the blood, there was congestion of the brain, or some other state allied to it, which might be relieved by cautious depletion. A leech was fortunately got and applied to the head, with most decided relief, and after a visit of two hours and a half duration, I had the pleasure of leaving the child in the enjoyment of a sound sleep, and in two days of seeing it quite well, after two or three doses of aperient medicine.

I could not find out how long the child had been under the water; all I could ascertain was, that it might have been one minute, but could not be more than five.

In the case of a still-born child, from breech presentation, on May 4th, 1856, I had the satisfaction of seeing the postural movements successful in restoring animation, after being *persisted in for twenty minutes before the child gave any sign of life.*

In a similar case, after a natural presentation on the 28th Jan., I failed in restoring animation, though the Ready Method was tried for thirty-five minutes. I might have continued the movements longer, but the mother required my attention for some time, and I deemed it vain afterwards to repeat them.

Until your last number appeared, I had no idea that any man or body of men, gifted with common sense, would have had any doubts of the propriety of following out the treatment recommended by Dr. Marshall Hall in all cases of asphyxia, from whatever cause. I have therefore contributed my mite to the list of cases already published, confirming the soundness of the views entertained and the treatment recommended by Dr. Marshall Hall, and trust that every medical man will see it to be his duty to follow out the Ready Method on every suitable occasion.

Apologizing for the extreme length of this communication, I have the pleasure to be,

Sir, yours, sincerely,

WM. ALEXANDER, M.D., &c.

Dundonald, 1857.

THE MARSHALL HALL METHOD OF TREATMENT IN ASPHYXIA.

To the Editor of THE LANCET.

SIR,—Admiring the zeal and perseverance with which THE LANCET continues to advocate that interesting discovery of Dr. Marshall Hall, which is, I believe, from its simplicity and readiness, likely to supersede the means hitherto employed for the relief of apnoea, and which, in consequence, has been so appropriately termed the "Marshall Hall Method," I wish to communicate a notice of the following case, in which it was practised with immediate benefit, and to commend its adoption under similar circumstances.

Thos. F—, aged fifty-four, labourer, a thin, spare man, of weakly habit, languid circulation, and having well-marked arcus senilis of both eyes, was brought to this hospital, on the 8th of April, having just sustained compound fracture of one toe (which was soon after removed), and such contusion and injury of the others, especially of the large one, as to impair its vitality, and lead to the supervention of sloughing and partial denudation of the bone.

Gangrene destroyed the whole of the upper horizontal half of the great toe. Mr. de Méric, therefore, had to operate in such a way as to turn up the extremity of the lower horizontal half towards the dorsum of the toe to a point where some skin had been left, a portion of the plantar aspect becoming anterior and superior, the toe being thus newly capped after the removal of the last phalanx. The patient was put under the influence of chloroform in the ordinary way, and kept in a state of unconsciousness for about, or perhaps somewhat longer than, the usual period, without manifesting any peculiar susceptibility, or other symptom of a suspicious nature, until after the toes were dressed and preparation made to remove him to bed. At this time, the breathing rather suddenly fell, and became almost imperceptible; the chest-play was so limited and imperfect, and the pallor of countenance so expressive of prostration and approaching syncope, as to require douching, sufflation, pressure over diaphragm, and other means. These not influencing the respiration, Mr. de Méric seized him by the body, while I held the head, and turning him alternately on his side and chest, soon produced the desired result; the *very first turn* being accompanied with a puff, which gradually became more whiffing and prolonged, was followed by a muffled groan, and ultimately terminated in deep and tranquil breathing.

The change was so rapid and obvious as to attract our immediate attention, and impress us with the conviction of its extreme value and necessity in cases of threatening asphyxia from chloroform, drowning, or other analogous cause.

I am, Sir, very respectfully,

Royal Free Hospital, May, 1857.

WM. CURRAN.

CHANGES IN CONSTITUTION, AND THE TYPE OF DISEASE.

To the Editor of THE LANCET.

SIR,—A great controversy has taken place in Edinburgh, we cannot say exactly between the veteran physician, Professor Alison, and the clever Dr. H. Bennett, but between Dr. H. Bennett, on one side, and Alison and others, on the opposition. Dr. Bennett says our superior knowledge of diagnosis, &c., has reduced the necessity of some of the appliances in the treatment of inflammation, especially bloodletting. Dr. Alison, on the contrary, affirms—and he is supported both by veterinary and other practitioners of the healing art—that the type of disease has altered, and although inflammations and other diseases

still affect the human subject, yet they do not assume that sthenic form of fifteen or twenty years ago, and therefore the primary remedy used in former inflammations—namely, bloodletting, is not called for in the present day, for there is now no high or excess of action to reduce, but only “local consequences” and constitutional derangements which now are generally of an asthenic type, requiring stimulants and rest, in fact, the treatment for constitutional debility instead of the treatment of powerful action.

I remember, many years ago, being in a coal district, and invariably found that the miners—who, like other people, had diseases, such as pneumonia, &c.—could not bear bloodletting, for a teaspoonful being extracted caused fainting. This is the type of the present day; and, thanks to Marshall Hall, who has settled the propriety or impropriety of bloodletting, in fact, has let bloodletting speak for itself, for he intimates, bleed if you like in the upright position, and if the patient shows signs of weakness or faintness early, then the system is not tolerant of bleeding, and take care and do not repeat the error. I remember being once called to a person suddenly attacked with peritonitis, easily traceable to rupture of the coats of the stomach, and the pain and suffering were so great that I was induced to try bleeding, and although the pulse was exceedingly small and weak, yet all the blood I took—and I took no small quantity—made no impression, faintness was apparently as far off at the first wound in the vein as at the last, or binding up of the vein; and I desisted, under the impression that I might bleed till the faintness of death itself approached before the ordinary faintness of bloodletting would have taken place. The patient died, as such patients generally do, within or about twenty-four hours after the escape of the contents of the stomach into the peritoneum.

However, all this is beside the question we started with—viz., Has the type of the constitution changed? for it is the constitution that has changed, and not disease that has changed. Without a doubt in my mind, the constitution of the body has changed, owing to some physical influence acting thereon. Disease is not now seen of the sthenic form, yet the same diseases exist—small-pox, scarlatina, typhus, and typhoid fevers, &c., &c. A blister to remove occasional local mischief, and nutritious diet and tonic remedies. These are the treatment now; the body cannot bear other treatment. Antimony, bloodletting, depressing remedies, if had recourse to, would double or perhaps quadruple the mortality. I believe disease may be easier treated now, under good diagnosis, than formerly; for the high inflammatory action of former days complicated, aye, doubled the effects of disease. We had then to contend against powerful sthenic action as well as the disease. Now we have to contend against weak action and disease. I think, as a general rule, I would rather have the latter than the former to deal with.

Dr. Barnes, of Carlisle, once said to me, after I

had related to him, with some doubt as to the result, a case of slow pulse (the pulse beat only 25 in the minute for several days), "never be afraid of slow action; it is high action that does the mischief," or words to this effect. I have found this as a general rule to be correct. I formerly stated, and I now repeat the statement, and more than ten years have elapsed since it was first made, (vide *THE LANCET*, vol. i. 1845), that a new type of disease, characterized by great depression of the vital powers, had sprung up, and to this day I know I am correct; for the same type, though less in degree, still has possession of the earth. Under this unusual type,—for we believe the original state of things may come round,—all life has suffered in the vegetable world. Take the potato. What is found there but depressed vitality? In animals, veterinary professors speak of weak action and intolerance of active treatment, and in man all disease in him speaks to depression. I attributed all this to vitiated magnetic action; and if you will favour this with insertion, a further paper, containing the experience I have gained in the relationship of terrestrial magnetism and life, shall be communicated to you.

I am, Sir, yours truly,

WM. REEVES, M.R.C.S.E., &c.

Carlisle, June, 1857.

THE MARSHALL HALL METHOD OF TREATMENT IN ASPHYXIA.

DR. MARSHALL HALL has forwarded the following communication for insertion:

Hamilton, Canada West, March 20th, 1857.

SIR,—As it must be gratifying to you to hear of the success of your method of treating the asphyxiated, I have the pleasure of reporting that on the 24th of August last, soon after reading your first paper in *THE LANCET*, I had an appalling case of placenta prævia. Hæmorrhage continuing after the birth of the child, extraction of the placenta necessarily preceded attention to the infant, who was about being removed as dead by the nurse, who had tied and cut the cord. It occurred to me, fortunately, to try your method, believing it applicable to the case of apnoea before me; and after persevering for at least ten minutes, respiration was fairly established, to the astonishment and delight of all present, and the child is now a fine thriving boy. Since then, in two cases of still-born children, though not so hopeless, I have easily succeeded in restoring animation by the same method.

Are you aware that a method of restoring suspended respiration in the adult, similar in principle to yours, is known, and has been successfully practised? The patient is placed in the sitting position, and the surgeon, standing behind him and pressing his fingers under the false ribs on each side, alternately elevates and depresses the ribs and sternum, moving the body a little backwards and forwards at the same time, to assist in the dilatation and contraction of the chest. I could suppose a case in which this might be even

more ready and as effectual as yours—in suspended respiration from chloroform, for instance.

I observe there is a discussion regarding the canula for tracheotomy. It should, of course, be sufficiently large to admit of easy respiration, but there ought to be some plan of diminishing the size of the opening, to enable the patient to cough—or rather to imitate coughing, and throw out secretion from the lungs. Through a full-sized tube the patient cannot expectorate, but diminishing the opening of the canula one-half or more, after a full inspiration, and forcibly expiring, expectoration will be thrown out. I believe death after tracheotomy is often caused by this inability to expectorate. I had a double canula constructed, the upper tube projecting, to be stopped by the finger; but, fortunately, I have never required it.

Can you explain why the os uteri, in cases of turning, when one foot only is brought down, should sometimes contract round the thigh of the child, retarding delivery, or impeding it altogether, till the hand is again introduced, and the os redilated? In three cases this has occurred to me, one of them being the case above mentioned. If it falls to my lot again to turn a child, I shall not be satisfied with one foot, as I was taught, and I believe is generally recommended by authors on midwifery. The loss of time and risk in finding the second foot can be nothing in comparison with that from this contraction, unless its cause and means of prevention were known.

I have the honour to be, Sir, most respectfully and gratefully,

Your very obedient servant,

H. CRAIGIE.

To Dr. Marshall Hall.

THE SPECULUM OCULI, OR OPHTHALMOSCOPE.

To the Editor of *THE LANCET*.

SIR,—Having promised Mr. Jabez Hogg that in the event of his publishing any of my drawings, I should be compelled to notice it, I must trouble you with the following statement of facts.

During the past winter, whilst availing myself of a kind invitation to witness the practice of the Royal Westminster Ophthalmic Hospital, I took notes and made drawings from several cases under the care of the surgeons to that institution, but in no instance without their consent. These drawings were seen by most of the hospital staff, and, amongst others, by Mr. Jabez Hogg, who expressed his approval of them in terms which were only too flattering, and begged to be allowed to look over them, with a promise that they should be restored on the following day. Some days elapsed, but the drawings were not returned, and having meanwhile had reason to suspect that they had passed out of Mr. Hogg's possession, I applied for their restoration; but it was only after this application had been repeated, and had been met by various excuses that I obtained them, and then in an indirect manner. At the same time I

learnt that the delay was to be explained by the fact that they had been in the hands of an artist instructed by Mr. Hogg to copy them.

I remain, Sir, your obedient servant,

GEORGE PARKINSON.

Grosvenor-street, June, 1867.

THE MARSHALL HALL METHOD OF TREATMENT IN ASPHYXIA.

CASE OF ASPHYXIA FROM SUBMERSION SUCCESSFULLY TREATED.

To the Editor of THE LANCET.

SIR,—On the evening of the 1st of this month, about seven o'clock, I was called to see a boy, who I was told had just been taken out of a deep pond, situated in a brickfield near this town. I arrived at the patient's house just as they were in the act of carrying him in, apparently lifeless. He was a thin, delicate child, between seven and eight years of age, and he presented the following unpromising symptoms:—Respiration entirely suspended; action of the heart inaudible; coldness of the entire surface of the body; pulse imperceptible at the wrist; great lividness of the face, and turgescence of the superficial veins of the neck. I immediately had the wet clothes removed, and placing the body on a blanket spread on the floor, proceeded to carry into execution the plan recommended by Dr. Marshall Hall for restoration in such cases, turning the patient on his side and a little beyond, making pressure on the spine, and exposing the face and chest to a current of cool air. When I had continued these movements repeatedly each minute for about half an hour (at the same time using friction of the body perseveringly) I was delighted to hear one or two gasping attempts at respiration, and in about another half hour the circulation became so far restored as to admit of his being removed to bed, where, however, he had a severe attack of convulsions, which continued so long as to compel me to repeat the postural movements for some minutes. The temperature of the body now increased rapidly, and at the end of two hours from the time of my first seeing him he became so far restored as to swallow a little, and to be conscious of the presence of his friends. The reaction and consequent fever was moderate, and the boy has now quite recovered from the effects of his accident.

From inquiries which I have made since, it appears certain that the child was submersed for at least *five minutes*, as he had to be extricated from the mud in the bottom of the pond by means of a ladder.

I remain, Sir, your obedient servant,

RICHARD ELLIS, L.R.C.S., Edin.

Bishops-Auckland, Durham, June, 1867.

Foreign Department.

STATISTICS OF STRICTURES OF THE URETHRA.

M. MARK SEE has published, in the *Gazette Hebdomadaire*, an able article on the determina-

tion of the portion of the urethra where strictures are most commonly found. He considers the question unsettled, and adduces the following statistics:—M. Prô, who visited England for the purpose, examined the pathological museums of London, and found (as far as the labels on the preparations could teach him) that out of 123 strictures, 20 were situated at the commencement of the spongy portion, 17 at the middle, and 31 at the anterior third of the same portion; 12 were at the bulb, 10 at the junction of the spongy and membranous portions, 15 at the commencement of the membranous portion, 10 occupied the whole of the latter, and 1 only was at the posterior extremity of it. M. Prô did not find one preparation illustrating stricture at the prostatic portion of the urethra.

M. ALPHONSE GUERIN, who has made many dissections on the subject, gives an account differing materially from the former. He never found, for instance, any stricture in the membranous portion of the urethra, and always observed them in the spongy portion. The latter statement is strengthened by the facts made known in the reports of the proceedings of the Paris Anatomical Society, which are as follows: Out of 30 strictures (as shown by post-mortem examinations), 15 were in the spongy portion, 7 at the bulb, 4 at the junction of the bulbous and membranous portions, and the situation of 4 was doubtful. All the above statistics are derived from autopsies, and may be relied on, though it should be recollected that many pathological changes may, with time, take place behind the stricture. As to the statistics founded upon measurements on the living, they are liable to great errors, from the various anatomical accounts bearing on the normal extent of each portion of the urethra.

COLLODION AS AN ESCHAROTIC.

Dr. MACKE states, in the *Medicinische Cent. Zeitung*, that he has used with advantage an escharotic composed of one ounce of collodion to one drachm of corrosive sublimate. He has used it principally in nævi, and small excrescences which patients wish to get rid of without the use of the knife. It is applied with a camel's hair pencil, dries rapidly, and cannot be rubbed off easily.—Applications of cold water may be made in cases where the inflammation runs high, without interfering with the action of the caustic. The eschar is thin, and falls off after three or mostly six days; pain is very slight, and the author has not found that any absorption of the bichloride takes place.

THE BEST WAY OF WITNESSING THE CIRCULATION OF THE BLOOD.

Dr. WAGNER, of Göttingen, advises for this purpose the use of animals narcotized by chloroform, whose mesenteric capillary vessels only allow of the passage of one row of blood-globules. The rapidity of motion can, under such circumstances, be easily ascertained.

News Items, Medical Facts, &c.

EXTRAORDINARY BIRTHS.—The wife of Mr. Henry Livingston, one of her Majesty's officers of Customs, Sunderland, was on the 24th ult. delivered of three children—two boys and a girl. She is about twenty-five years of age, and this is the first time she has been a mother. She was following her ordinary household duties till she was taken ill, and about seven o'clock presented her husband with this threefold blessing. The mother and children are doing well.—*Newcastle Express*. On the 11th ult., a woman residing at Brockmoor, near Brierlyhill, was delivered of two dead children, with instruments, by Messrs. Onions and Cooke, surgeons. The children had grown together, and were united at the lower part of the stomach. The other parts of their bodies were distinct and separate. One of the children was considerably larger than the other. The mother was doing well under the care of the above gentlemen.—*Wolverhampton Chronicle*.

TWO MEDICAL VICTIMS OF THE DANGERS INCIDENT TO THEIR PROFESSION.—M. Geoffroy, a highly respected physician of Avignon, in France, formerly mayor of that city, and for many years at the head of the Asylum for the Insane, was lately assassinated by an epileptic inmate of the establishment. The wretched patient was subject to fits of furious mania, but had for some time past been very quiet, and was thought to be in a fair way of recovery. He was a tailor by trade, and busy at work, on the 30th of April last, during M. Geoffroy's presence in the ward. Towards the end of the visit, he requested the doctor to look at his leg, where he stated he was experiencing pain; and whilst M. Geoffroy was stooping to examine the limb, the man passed his arm round Mr. Geoffroy's neck, and thrust into the left side of his chest the long scissors used in his trade. He was just going to make a second thrust when he was secured by the house-surgeon and the steward. The weapon had reached the heart, and M. Geoffroy died in a few moments. The patient had not evinced any dislike for the ill-fated physician, and was most respectful and docile. It is supposed the horrible deed was done whilst the patient was labouring under a hallucination.—The other victim is a medical man named Salle, practising in Nancy. This gentleman was completing the operation of tracheotomy, which he had undertaken upon a child suffering from putrid sore-throat. Dr. Salle, who was only twenty-nine years of age, seeing the trachea quickly filling with blood, put his lips to the wound, and drew by inspiration the fluid ready to choke the child. The next day, the same putrid state of the fauces and the tonsils appeared in M. Salle, and forty-eight hours afterwards he died, in spite of the efforts made by his colleagues to save their noble-minded friend's life.

CHLOROFORM IN SEA-SICKNESS.—Dr. Landerer of Athens, states that from ten to twelve drops of chloroform, in a little water, is an unfailing remedy in sea-sickness. One dose has been known to give immediate relief.

ROYAL ORTHOPÆDIC HOSPITAL.—Number of patients admitted during 1856, 1533. Receipts for the year, £4022 15s. 1d.

THE LATE SIR ASTLEY COOPER.—In a recent number of the *Boston Medical and Surgical Journal*, Professor March draws attention to a very curious mistake made by Mr. Bailey on his statue of Sir Astley Cooper in St. Paul's Cathedral, in stating the year of his death to be 1842, whereas his nephew and biographer, Bransley Cooper, gives it as occurring at "six minutes past one P.M. on the 12th February, 1841, in the 73rd year of his age." Professor March adds, that when we reflect that generation after generation for centuries and for centuries may pass away, when we consider the perishable and combustible material of records in manuscripts and in books it would seem proper that the marble, safely deposited as it is in a structure that has stood the test of time and the influence of the elements many centuries, should be made a faithful record of the earthly end of Sir Astley Cooper.

DISCOVERY OF A BED OF FOSSILS.—As some men were getting out clay for bricks on the farm of Mr. Greaves, of Tingewick, Bucks, a few days ago, they found several strata of fossils, and having never seen such strange things before, they sent some to Mr. Stowe, surgeon, of Buckingham, to know what they could be. He examined a great number of them, and pronounced them to be marine vegetables, fungi, and algae, and fungi, which had either grown where they were found, or had been washed out of the Chiltern chalk range, and drifted to that locality. This opinion was strengthened by their being all striated with thin layers of chalk, and being composed of marl, which is a mixture of clay and chalk. The colour and the shape of many of them are so like that of biscuits that they deceived persons at table, but their variety of shape is fantastic beyond description, and their number immense. Specimens have been submitted to several competent examiners, who cannot at present classify them accurately till their structure has been decided by microscopic examination, being unlike any known fossils yet depicted or described in geological or botanical works, or any that have come under their observation before. Many years ago a large deposit was found at the Isle of Sheppey on the Thames, but they were tropical in their origin, and consisted of cocoa nuts, fruits, spices, &c., to the extent of 700 varieties, which were catalogued by a Mr. Crow, and recorded in the "Philosophical Transactions." We are authorized to say that Mr. Stowe would send specimens to any institution or individual who takes an interest in such matters on their paying the carriage by rail.—*Oxford Journal*

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No. 3.

Practical Lectures

ON THE

MANAGEMENT OF THE DIGESTION IN DISEASE,

*Delivered during the Summer Session of 1857, at
St. Mary's Hospital,*

By T. K. CHAMBERS, M.D., F.R.C.P.,

LECTURER ON THE PRACTICE OF MEDICINE AT ST. MARY'S MEDICAL SCHOOL, AND PHYSICIAN TO THE HOSPITAL.

(Continued from August No., page 101.)

I PURPOSE in this and the following lectures to go through the chief morbid phenomena which the function of digestion may exhibit, pointing out how far our physiological knowledge will help to explain them, and what general indications of treatment they give.

Healthy digestion is *easy, quick, and complete*. There can be no excess of it. Food cannot be too easily, quickly, and completely converted into chyme and taken into the system. There is no such thing as too much health.

In ill-health digestion is impaired in one or more of these qualities—it becomes *painful, slow, defective*.

Those who wish it may use Greek words, and call the above-named erring qualities of the digestion Dyspepsia, Bradypepsia, and Apepsia. Only let them remember, that making the old adjectives into new substantives adds no whit to our knowledge; and, unless care is taken, runs some risk of impeding its progress. For when we have in this way given a proper name with a capital letter, we are apt to think we have defined an individual disease, instead of what is really the quality of a function. I shall therefore use the familiar adjectives, but first say shortly what I mean by them in this connexion.

Painful digestion may be, and often is, both defective and slow; but, on the other hand, it not unfrequently also is complete and performed with

sufficient quickness. All that is intended by the word is, that it is accompanied by feelings varying from slight discomfort to absolute torture at some stage of its progress.

By *slow* digestion, I mean that the act is not completed in some part of the alimentary canal by the time when the convenience of the individual and of society require that it should be. The stomach, for instance, may retain so much of a former meal that it is not in a fit state to receive a new one which is absolutely required for the sustenance of the body. This is generally indicated by a want of the natural appetite which ~~when the upper portion of the digestive apparatus is ready to do its work, and, in chronic cases, by imperfect nutrition, anæmia, debility, &c.~~ Or, if we attempt to force food too quickly on the unwilling stomach, we have chemical decomposition and defective digestion.

By *defective* digestion, I mean that food capable of nourishing the body cannot do so from lack of certain changes which it naturally undergoes in the alimentary canal. It is passed from thence either unaltered or chemically decomposed. There are seen in the fæces, either by the naked eye or the microscope, lumps of muscular fibre, fat, starch, &c.; or else the products of their decomposition, consisting of various obnoxious gases and acids, are developed in quantity subversive of comfort.

The morbid phenomena accompanying these errors of the digestive function may be divided according as they occur during the *first* stage, that is before the alimentary mass has passed the pylorus; in the *second* stage, that is during its passage along the small intestines; or in the *third* stage, after the passage of the ilio-cæcal valve. Now remark, I do not call, and I wish you not to call, these phenomena diseases of the stomach, or of the intestines, or of the colon. They are not so, and must not be treated as such. The discomforts felt in the first stage, for example, may be due to organs quite remote from the sto-

mach—to the uterus, to the kidneys, to the teeth—yet they may be called by the same names, and treated by the same remedies as when they are owing to anatomical changes in that part. So those of the second and third stage often are traceable not to anything wrong in the ilia or colon, but to excess of mucus or deficiency of pepsin in the stomach, which is above them. This is a consideration of much practical importance, for of course it influences the treatment.

In the first stage of digestion we may notice, as common phenomena, those generally known by the following names:—

Heartburn;
Acidity;
Weight;
Tightness or distention;
Oppression;
Wearing or boring pain;
Cramp or spasm;
Eructations;
Vomiting.

I should recommend you to use these words rather than any new Greek or Latin compounds, which assume to include them. As a German writer says, "I do not see why we should invent words for the use of the dead Greeks and Romans;" and nine times out of ten the manufactured terms are not nearly so accurate as those which have grown into use.

HEARTBURN.

A sensation as of extreme heat at the cardiac orifice of the stomach, running at intervals up the course of the œsophagus.

From the effects which alkalies have in relieving temporarily this discomfort, there seems no doubt that it arises from the action of the acid contents of the stomach on the cardiac and œsophageal nerves. *The gastric mucous membrane itself does not suffer from acids*; it secretes them,* and bears them in contact for the remainder of the day without inconvenience. The gullet, too, will bear them for a short time, swallowing a mouthful of sour victuals or drink gives a healthy man no immediate inconvenience; but a continued exposure becomes painful in close proportion to its length, as may be easily tried by pouring down such articles slowly and continuously for a few minutes, whereby a pain will be produced even in the most healthy.

Heartburn, or pain from the action of acids on the cardiac end of the œsophageal plexus, may arise in three ways:—

1st. By over-sensitiveness of the nerves;

2nd. By too long exposure to the acids of digestion;

3rd. By too much acid being formed.

(1st.) *By over-sensitiveness of these nerves* (— Over-feeling — Hyperæsthesia).* This is sometimes, but not always, accompanied by over-sensitiveness in other parts of the body, and is the form of heartburn which weak, nervous, hysterical persons suffer from. It comes on almost immediately after eating, directly the contents of the stomach have begun to assume that degree of acidity which is natural and necessary to them. If vomiting does not occur, it continues till they have become neutralized either by the saliva which usually flows abundantly down the œsophagus, or by taking some alkali, or by the morning on of the mass towards the pylorus.

The worst of this neutralization, natural or artificial, is, that a good deal of the albuminoid food remains undigested. It is absolutely requisite for its solution by the gastric juice that it should be acid while in the stomach; and if this natural acidity is prevented, because it happens to be painful to the over-sensitive nerves, the pepsic solvent cannot act. Thus, the digestion, from being painful, is made defective also.

A peculiarity of heartburn from over-sensitiveness, which often is a great assistance to the diagnosis, is, that one kind of food brings it on as much as another; just in the same way as the peculiar grinding pain of gastric ulcer (which will be spoken of in a future lecture) is frequently to be distinguished by there being so little difference felt between various articles of diet. It is to be observed, also, that it is very often worse after the early than after the later meals, even though the dietary should be more sparing and more digestible. Indeed, in private practice, where one sees lighter diseases than those in the wards, I have notes of several patients who have eaten dinner and suppers without distress, but who invariably suffered after breakfast.

This form of heartburn usually occurs in nervous, sensitive persons, whether their state of system is congenital, or induced by external circumstances. Any morbid or extraordinary condition of the parts supplied by the abdominal plexuses of sympathetic nerves often brings it on. Tumours of the uterus or pregnancy are a very common cause, and excessive or painful menstruation often induces it in the female; and in the male, I have known it produced by piles and by mere constipation. It not unfrequently is accompanied by vomiting in persons who have a tendency thereto. And in these cases you have an opportunity of examining the contents of the stomach, and confirming what I stated about their being in a normal condition, by no means over acid or otherwise unnatural.

Over anxiety, watching, harassing mental emo-

* There appears no doubt about the gastric juice being secreted acid, and becoming neutral only from admixture with saliva. See the recent experiments of Drs. Bidder, Schmidt, Grünwaldt, and Schröder, compared in my "Digestion and its Derangements," chap. iv.; and "Experiments on Digestion," by Dr. F. G. Smith, Philadelphia, 1856. This last named very valuable renewal of observations on the patient with gas ric fistula, formerly a servant of Dr. Beaumont's, seems to show pretty conclusively that in the human subject the acid secreted is not the muriatic, but probably the lactic. The origin of the finding muriatic acid in gastric juice is that lactic acid decomposes the chloride of sodium contained in all animal secretions.

* Here is a blatant example of the confusion attendant on using words. Hyperæsthesia is used now in writing and speaking with seeming propriety, for morbid excess of sensation; but as lately as 1831, it is defined in Hooper's Dictionary "Error of appetite."

tions, and in short, all external circumstances which bring on over-sensitiveness in general, induce this state of digestion. Local pressure on the epigastrium will also often fix the disorder in that part. It is curious that while the ordinary nerves of feeling appear blunted by pressure and the frequent repetition of excitement, the sympathetic should be made in the same way more sensitive. Such, however, appears to be the case with the epigastric plexus, from the frequency with which this form of heartburn occurs in shoemakers, needlewomen, clerks, and others whose ordinary occupations involve pressure on the pit of the stomach.

As anæmia, debility, and occupations which occasion them, induce this heartburn, so it, too, will react, and increase them, or even bring them on. An impoverished stomach, thus unable to bear the labour of digestion, becomes poorer still from defective supply. That happens in the human body which Martial complains of as one of the vices of civilization—those most in want gather least wealth—

"Dantur opes nulli nunc nisi divitiibus."

But at the same time a slight change of habits, or slight relief from medicine, will equally react beneficially, and commence a march towards health with unexpected rapidity.

It will also, too, be sometimes associated with, and very much aggravate, the intermittent headache of marsh miasma, causing "brow-ague" to commence after the midday meal, instead of at other times.

The suddenness with which it will come on, and the rapidity with which it often goes away, is a great help to the diagnosis of the nervous origin of this heartburn, and is also a great encouragement to the physician to promise relief to the sufferer.

The sketch I have given of the physiology of this disorder points out the treatment most likely to be successful in the end. The aim must be, not to neutralize the acid, but to blunt the over-sensitiveness of the nerves. This can be done, first, *directly*, but temporarily, by medicines known, experimentally, to have that effect on sensitive nerves; secondly, *indirectly*, by strengthening the whole system, so that those nerves along with it may become hardier to bear the brunt of their necessary duties.

You have seen me, therefore, in the wards, begin the treatment with hydrocyanic acid and bismuth, and in a few days commence the use of steel or valerian or quinine. The benefit found from the first-named drugs is decided indeed, but it is temporary, and few cases will get permanently well without they are followed up by the tonics. At the same time, there is a great advantage, still greater in private than in hospital practice, in commencing with a medicine whose influence is immediate, and which will gain the confidence of your patient for any future plan you may adopt.

Where brow-ague, or any other form of neu-

ralgia, is concomitant or consequent, you will best treat it by four or five grains of quinine, taken an hour and a half before the meal after which it comes on—that is to say, in most instances, the midday meal. I have found this treatment of the neuralgia more effective than iron, curing not only more certainly, but more rapidly.

Sponging the body with cold sea-water, and the shower-bath, are often most useful remedies, acting doubtless through the general system in a great measure. But cold sponging or douching the epigastrium, which may be easily managed sitting in a hip-bath, appears to have a special local action, and certainly does still more good.

The tonics which must follow up this special treatment may be varied according to the case and the patient's convenience; but, as a general rule, I find none do better than iron.

(2nd.) *By too long exposure to the acids of digestion.*—Many influences, which in moderation are rather pleasant than otherwise to the sensory nerves, become exquisitely painful when long continued. For example, the immersion of a limb in water, a few degrees below the temperature of the air, is not disagreeable, and may be kept on with intermissions for any length of time; but becomes absolute torture if persisted in without an interval of rest. So, in many cases, a sluggish stomach, in which the progress of digestion is too slow, causes the cardiac orifice to be so long steeped with acid that it becomes painful, though a proper exposure for the natural length of time could be borne with ease. Just in the same way, a continued dribbling of fæces will make the anus sore—a continual running from the nose excruciate the nares.

This form of heartburn never, like the first, comes on immediately after eating. It often does not occur till four or more hours are passed; in fact, till the period at which the stomach ought to be nearly empty, and preparing for another meal. But the most usual time is an hour after food. Its long continuance will, however, be apt to induce that tenderness of nerves which constitutes the first form, so that it will approach nearer and nearer to the time of meals, till at last it commences immediately. It differs, though invariably, in one important diagnostic peculiarity, that it is more common after the later than the earlier meals. It will also, like the first form, bring on nervous headache, and occasionally a decided intermittent neuralgia, aggravated by the same causes, and removable by the same remedies, as that arising from marsh miasma. Even if the meal should be omitted, this headache will still come on; but if the *time of the meal* be changed, the time of the headache will change with it.

Though the œsophagus is relaxed so as to admit of some regurgitation, yet what comes up is seldom more than air, usually of a neutral inoffensive character, and not in the great quantities and with the explosive force which marks the formation of carbonic acid by fermentation in the stomach.

The persons in whom it occurs are active men of business, literary labourers, clerks, over-thoughtful and over-careful. But when once acquired, it is very apt to persist in spite of a change in the mode of life. I have had as patients thus affected many farmers and country gentlemen who had suffered since youth, though living with little apparent care or intellectual occupation.

As before mentioned, it may lead to the first form of heartburn; but in symptoms, pathology, and treatment, it may be considered as a transition from it to the next in order. And I will, therefore, postpone speaking of the indications it affords till I have brought before you the heartburn which arises,

(3rdly,) *By too much acid being formed.* To this the name of "Acidity" is applied with propriety, because there really is an excess. It comes on at a period more distant from the time of meals than the last kind, and may be considered, in some respects, as a further stage of it. The pain, however, is much less intense in general, sometimes so slight as to cause scarce any inconvenience. But the regurgitations are much greater; sometimes true vomiting occurs, distinguished by spasmodic action of the diaphragm; sometimes only a teaspoonful of intensely sour liquid comes up, roughening the teeth, and bringing tears into the eyes; sometimes a gaseous acid (acetic and butyric) is belched up spasmodically; sometimes it oozes up gradually, and its presence is shown by the saliva and breath being sour to the taste and smell.

These peculiarities will suffice to distinguish between "acidity" or heartburn from real excess of acid, and those forms previously named where the excess is only apparent. A further test may be found in the action of remedies: a small dose of alkali, a grain or two of soda or potash, will be sufficient to appease them; whereas, in this case, a very considerable dose is required.

Acidity is often misunderstood. I have heard it spoken of as an "excess of gastric juice," "excess of action in the stomach"—that is to say, too much of a vital act, too much life. Such a mode of speaking, if it leads to anything, must lead to faulty thinking and bad treatment.

Instead of being an excess of gastric juice, it is itself a proof of deficiency. You may prove by experiments on artificial digestion, that an increase in the quantity of the solvent secretion quickens the solution of albumen. You will find, for instance, that the amount of pepsin contained in twenty grains of Boudault's powders will dissolve a piece of hard-boiled white of egg much sooner than five grains. The same thing would of course happen in the stomach; were there more gastric juice there would be quicker digestion. But in "acidity" such is notoriously not the case; the aliments lie for a long time in the upper part of the digestive canal, and often are, after all, passed undissolved in the feces. It is a chemical act of decomposition directly opposed to the vital act of digestion.

I call a "vital" act any which forms part of

the great circle of life, such as is the conversion in the stomach of albumen incapable of solution and absorption into peptone capable of entering the circulation. Now, when this vital act of conversion is carried on with rapidity by a stomach making copious gastric juice strong in pepsin, then chemical decomposition is prevented; nay, it is even arrested after it has commenced, as may be seen by putrid meat not becoming more but less putrid as it passes through the body of a healthy animal. But when the conversion is slowly or imperfectly performed, then chemical change has time to take place, and does so very soon, being favoured by the heat, moisture, and animal matter in a state of change. If the food remain too long without becoming chyme, the protein compounds putrefy with extreme rapidity under such circumstances.

Compare this white of egg which has been immersed in saliva at the temperature of 100° Fahr. for twenty hours, with another portion from the same egg kept the same time in distilled water. Your nose warns you of the difference directly; the first is intolerably fetid, the second quite sweet.

(Experiments shown.)

Exactly similar is the fate of undigested albuminoid matter, whether animal or vegetable, in contact with the mucous membrane inside the body. But how does that affect the case of acidity? Thus: I have in this beaker some *symp* of grape sugar, quite neutral and natural. Here is some of the same which has been poured on a piece of putrefying albumen a few hours ago, and kept at the temperature of the body. You see that a piece of litmus paper I put in it is strongly reddened, showing the copious formation of lactic acid. In another beaker, the formation of butyric acid from fresh butter by the same means is shown to you.

(Experiments shown.)

Just so all the grape sugar and fat swallowed, when it meets in the stomach or intestines with decomposing animal food, remaining in a mass or glued to the side by a too-sticky mucus, ferments quickly throughout, and forms lactic and butyric acids in great quantity.

Remember, the grape sugar *swallowed* means something much more important than merely the grape sugar *eaten*. See this boiled starch; I heat some of it with the potassio-tartrate of copper, and there is no change in the blue colour of the salt. Now I put some in my mouth, and hold it less than a minute.

(Experiments shown.)

See! when it is again heated with potassio-tartrate of copper, the metal is precipitated, and shows by its brilliant yellow colour an abundant quantity of sugar. The saliva, you see, *begins* to convert starch into sugar *immediately*; very soon it will transform the whole mass. A mouthful of boiled starch which I held in my mouth for

five minutes the other day showed afterwards scarce a trace of starch remaining. As, even amongst meat-eating nations, from half to five-sixths of the solid food consists of starch,* it is evident that one of the most bulky contents of the stomach must be the sugar which has been made by the saliva out of amylaceous food. Here then is ample material for the formation of lactic acid to almost any amount. Add to this the oleaginous substances which it is impossible to avoid in any diet, and which, from being insoluble in water, constitute a peculiarly acrid and concentrated acid, and you will have no difficulty in accounting for acidity, without recurring to a theoretical excess of gastric juice. Acidity then is an evidence of chemical, and therefore of decreased, vital action, a proof of incomplete digestion, of deficient activity in the stomach.

On this rests the *rationale* of the hints for treatment which it gives. The way to cure it *temporarily* is to neutralize by alkalies the excess of acid which is formed. And this may be freely done without fear of bad consequences; for you are not likely by any reasonable dose to make it so far alkaline as to interfere with digestion. It is not in this form, where acid is really in excess, but in the first (or nervous) heartburn that alkalies do harm, for the reasons there stated. Where it arises simply from the temporary debility induced by occasional gluttony, "the remorse of a guilty stomach," it may be left to cure itself. But a *permanent* cure can only be brought about by re-agents which—

(1st.) Strengthen the local power of the gastric solvent;

(2nd.) Augment its quantity;

(3rd.) Excite the peristaltic motions.

The local power of the pepsin secreted, although in diminished quantity, may be much increased by neutralizing the saliva swallowed and collected in the stomach and œsophagus just before the meal. In laboratory experiments on artificial digestion, you will find that saliva arrests the solvent action of pepsin in a close proportion to its amount. In the laboratory you may set the action at work again by acidifying the mixture, unless you have waited so long as to allow it to decompose. So, too, in the stomach, if you take it in time, you may free the pepsin from the alkaline saliva, and enable it to do its duty by adding acids. The best to select are those to which the viscera are most used, hydrochloric or lactic. A few drops of these taken immediately before meals will almost always have a most beneficial effect.

The quantity of the gastric juice may be increased by supplying one of its most important constituents, water; but in large quantity at the meal it is apt to dilute too much the sparing secretion, and hence it is better to direct the principal draughts to be taken half an hour afterwards. An artificial gastric juice, in the shape of

one of the new preparations of pepsin, may also be given if the acids are not sufficient; but I prefer to try at first and make the patient his own secretor. The colder the water the better; for the low temperature acts as a tonic shower-bath to the local nerves, and removes the congestion of the bloodvessels, while at the same time it never quite stops digestion, and soon acquires heat enough to let it go on with full rapidity.*

Your patient will perhaps think that you are blowing hot and cold, or rendering inert your own treatment, by ordering acids at one time and alkalies at another; so you will find it a wise plan to give him a little physiological lecture on the subject, explaining the reason of your conduct. You may explain also that the acids given as medicine do something more than in the laboratory: they stimulate the mucous membrane, and so actually increase the quantity of secretion while they increase its power. You need not have the fear, which I have heard some express, that the use of these substitutes for the natural constituents of the gastric juice, or rather the supply of that which ought to exist in the gastric juice, will make the stomach lazy—as doing a servant's work for him makes him less equal to doing it himself. On the contrary, the new vigour put into the system by the healthier and more copious chyme that is formed, makes the organ more active; so that it soon is enabled to go on secreting itself what is wanted, and to do without the artificial substitute. Do not, therefore, let patients fancy that they shall get into a habit of taking these medicines, so as to be obliged to continue or to increase the dose. If they derive benefit therefrom, they will be able soon to leave them off.

The action of the peristaltic muscles of the stomach can be excited by most of the drugs which act as purgatives. But unfortunately, in the great majority of gastric complaints, purgatives are decidedly injurious, so that the good done to the stomach is overbalanced by the injury done elsewhere. The least hurtful are rhubarb and aloes; but even they somewhat impede the digestion in many persons who take them as a dinner pill. A better expedient is strychnine. Its small bulk causes it to be quickly absorbed, and to act locally on the stomach alone without affecting the rest of the system; so that where common caution is observed, I have never known it obliged to be left off on account of its specific spasmodic effects; at the same time its beneficial influence is most marked, and in many instances it acts as a bitter tonic also, increasing the appetite and spirits.

I shall in the next lecture go on to speak of Weight, Oppression, and other phenomena which may accompany the first stage of digestion.

* Cold certainly retards the action of the gastric solvent, as is shown by some experiments on artificial digestion I published in THE LANCET of May 28, 1867. But at the same time it does not stop it. Even the freezing temperature does not entirely do that, as is proved by Drs. Bidder and Schmidt.—*Die Verdauungs-äfte*. Exp. ix., 1, 2; x., 1; xi. 1; xvi.; xvii. This is a comfort to the admirers of tea.

* See the dietaries of soldiers, prisoners, labourers, and others, analysed by Dr. Hildenbrand in "Die Normal-Diät," p. 60. Berlin, 1864.

THE
Lettsomian Lectures
 ON
MIDWIFERY.

*Delivered before the Medical Society of London,
 May, 1857.*

BY ROBERT BARNES, M.D.

ON THE PHYSIOLOGY AND TREATMENT OF
 PLACENTA PRÆVIA.

LECTURE I.

MR. PRESIDENT AND GENTLEMEN,—In undertaking the honourable office which the suffrages of the Council of the Medical Society of London have assigned to me, two sources of anxiety oppressed me. In the first place, I could not but feel deeply the responsibility imposed upon me of not discrediting a Chair, instituted for the purpose of doing honour to the memory of Dr. Lettsom, an illustrious founder of this learned Society. I had in the next place to consider well whether there was any great question in Obstetrics which I had so studied, that I might hope to bring it before the Society in a form worthy to engage the attention of a body of learned men, skilled in the practice of medicine, and well fitted to criticise both the subject selected, and the manner of treating it.

There is one great question which has ever arrested the attention of the obstetric anatomist and practitioner since obstetrics has existed as a science. The Physiology and Pathology of Placenta Prævia will never fail to arouse the interest and stimulate the researches of the thoughtful physician. It is this subject which I propose to treat. I do so with the hope of adducing some facts and reflections of value in practice, and not perhaps altogether unworthy to be remembered in association with this Chair.

It is singular, indeed, that more than once in the history of obstetrics we may observe a period when every pathological and therapeutical problem in placenta prævia was considered to be solved. But it has also been found, and our own daily observation still offers too many sad illustrations of the fact, that if the received theoretical propositions, and the consequent therapeutical corollaries, be admitted to be sound, under the present methods of treatment the peculiar perils of placental presentation are not always successfully encountered. I believe that in this particular case, although I am far from thinking this rule generally applies in medicine, ill success in treatment is presumptive evidence of error in the principles upon which that treatment is based. It is, no doubt, some feeling of this kind that has always kept alive in some minds a distrust as to the perfection of the prevalent doctrines, and kindled the desire to reopen their fundamental questions. We are at this moment at an epoch when, in the opinions of many, the theory of placenta prævia is

perfectly understood, and the rules of practice are clearly defined and settled. For some, Levret and Rigby; for others, Radford and Simpson have spoken the last word upon this great obstetric question. But I would ask even those who have arrived at the most firm convictions upon the theory of placental presentations, as to the source of the attendant hæmorrhage, and the means of staying it,—Are they equally satisfied with the results of their treatment? Do they believe there is no resting-place for a hope of further improvement? That many are so satisfied, that many cherish this belief, I can hardly think.

I would venture here to submit the following proposition as a law of Medical Inquiry: Never to admit that we have arrived at a full understanding of the theory of any disease, so long as that disease baffles our skill in treatment.

That placenta prævia falls under this law there can be no doubt. As it is at least competent for me to devise laws for my own guidance, I feel amply justified in entering upon the free investigation of this subject; and knowing well that where I may fail in elucidating, I shall certainly succeed in raising a spirit of inquiry in other minds, which cannot but bear a goodly fruitage, I enter upon my task relieved from the apprehension I might otherwise entertain lest I should treat this great subject unworthily.

I propose, in the first place, to pass under historical and critical review some of the cardinal points in the physiology and pathology of placenta prævia, as a necessary introduction to the novel, and, as I venture to believe, more accurate views, which it is my especial design to bring before you.

The opinions of some of the older obstetric authors are well summed up and fairly represented by Dr. Lee. Having compared his summary and quotations with the originals, I find little to correct or to add. Amand, Lamotte, Guillemeau, Petit, Portal, Giffard, Puzos, Smellie, Roderer, and Levret, all knew, and described from actual observation, that the placenta in certain cases adhered to the lower segment of the uterus; they all knew and fully comprehended the perilous nature of this complication; they knew that the hæmorrhage was inevitable; all perfectly distinguished between the case of hæmorrhage from detachment of the placenta where this organ had been originally adherent to the lower part of the uterus, and that case where the placenta had been detached from its normal seat. All, except Puzos, insisted upon the importance, the urgent necessity, for delivering the woman; nothing can be more definite or unequivocal than the injunctions or the recorded practice of Mauriceau, Portal, Smellie, Roderer, and Levret in this emergency. Puzos insisted upon the advantage of rupturing the membranes with a view to arrest the hæmorrhage; he relied more upon the resources of Nature than the other physicians cited. Daventer stands almost alone in the belief that in these cases of flooding with the placenta at the os uteri, the placenta was always wholly detached, and that it had slipped

down from the fundus. Further, any one who reads the cases reported by these authors cannot fail to gather from the collateral circumstances and observations related, that the danger of placental presentation, its general features, and the urgency for delivery, were equally recognised not alone by these authors themselves, but also by so many other physicians, who either assisted at some of these labours, or whose opinions were announced in connexion with them, that this knowledge and this practice formed part of the current received medical science of the times.

This current knowledge was, however, first thoroughly digested and systematized by Levret. Did Levret introduce any new fact, propound any new theory, or recommend any new mode of practice? This question must be answered in the negative. Shortly after the publication of Levret's work, the late Dr. Rigby, of Norwich, published the first edition of his celebrated "*Essay on Uterine Hæmorrhage*." Up to this time it appears that Dr. Rigby had not seen the work of Levret, and from the terms in which he refers to the views of Mauriceau, Portal, Giffard, Smellie, and others, he does not seem to have been aware of the extent to which his own doctrines had been anticipated.

From the preface to his sixth edition, we learn that he first became aware of the occasional implantation of the placenta upon the neck of the womb, from his own experience; and from his manner of referring to the descriptions of the authors named, he appears to have laboured under the misconception that they had not plainly stated the fact, that the placenta was occasionally so attached. "He had neither read nor heard of the placenta being ever fixed to the os uteri." He admits further, in the same place, that when he had read Levret's book, "he felt less entitled to the claim of absolute originality on the subject; and now rested perfectly satisfied to divide with Levret the credit arising from the mere circumstance of communicating a new physiological fact."

But since Levret had not "communicated a new physiological fact," but had rather epitomized the current knowledge of his time, confirming it by his own experience, what originality can we assign to one who in the end claims to share with Levret a merit which Levret does not possess? I say this without any desire to detract from the worth of the writings of these famous authors. The works of both are rich to profusion in the records of facts of imperishable value, and in reflections that will ever prove in the highest degree instructive and suggestive.

It is unnecessary to say more in proof of the assertion that the occasional deviation from the fundal seat of attachment of the placenta was well known to the older anatomists and obstetricians, than to cite the distinct statements of Heister, de Graaf, Fallopius, and Muller. In addition to the unequivocal descriptions of particular cases, Portal has these remarkable words: "*Il faut remarquer que l'arrière-faix se trouve souvent adhérent; c'est-à-dire collé, attaché, ou contigu au corps de la*

matrice, tantôt à une partie, tantôt à l'autre, selon qu'il plaît à la nature de se jouer."

This passage is quoted by Levret. Co-extensive with this general knowledge of the anatomical fact, that the placenta was occasionally implanted on the cervix and orifice of the uterus, we find a general appreciation of the pathological fact, that when this unfortunate circumstance occurred, there was a necessary—call it unavoidable—and dangerous hæmorrhage. Nor did those who recognised the anatomical and pathological elements of this complication stop short of the now current therapeutical law.

From the time of Paré and his pupil Guillemeau, the necessity of delivering, as early as possible, has been enforced by Mauriceau, La Motte, Portal, Chapman, Giffard, Smellie, Roederer, Levret, and their successors, as the course that was above all things necessary. These are essentially the doctrines of Rigby. No one now disputes the fundamental anatomical fact. The unavoidable character of the flooding is almost as universally conceded. Down to a recent period the practice has, with certain modifications, adapted to varying cases, been equally uniform.

At a certain period of his practice, Mauriceau appears to have discovered that in some cases of flooding where there was only partial presentation of the placenta, or where the membranes presented, rupture of the membranes and evacuation of the liquor amnii might be sufficient. Subsequently Puzos defined with more precision the cases in which rupture of the membranes might be practised. But still the *accouchement forcé* remained the general rule in all cases of hæmorrhage from detachment of the placenta.

The late Dr. Rigby, having clearly recognised the difference between the hæmorrhage that arose from the occasional, or, as he calls it, "accidental" detachment of the placenta from its normal position, and that which took place as the inevitable consequence of the progress of gestation or of labour when the placenta grew to the os and cervix, soon came to the conclusion that this difference in the mode of production called for different modes of treatment. In the earlier editions of his work he says, "that unavoidable and accidental hæmorrhages require very nearly opposite modes of treatment; that in the first, manual extraction of the fœtus by the feet, or forced delivery, is absolutely necessary to save the life of the mother, and that in the second species such practice is never required." But it is rare indeed that Nature submits to be thus bound by the absolute Never or Always. In his third edition Dr. Rigby was compelled to modify this dictum: he admitted that "assistance might be required in accidental hæmorrhages."

The most important questions in the pathology and therapeutics turn so closely upon the assumed "inevitable" nature of the flooding, that I must cite more largely in reference to this question. It is not necessary to recur at greater length to the emphatic expressions of Rigby or his predecessors. My object is rather to show how far the

conviction as to the absolutely necessary character of the flooding still prevails.

Thus Gardien :* "On admet généralement que plus le travail de l'accouchement avance plus l'hémorrhagie devient abondante, parceque le décollement du placenta qui y donne lieu, est plus considérable ; que ce qui tend à augmenter les contractions de la matrice *augmente nécessairement* l'hémorrhagie ; que les moyens de la suspendre sont précisément ceux qui auraient pour effet d'éteindre les contractions, car l'hémorrhagie ne diminue et ne cesse que dans l'intervalle des douleurs."

"La perte produite par le décollement du placenta dans tout autre point de la surface interne de la matrice augmente lorsque les vraies douleurs de l'enfantement sont suspendues, et cesse quand les douleurs sont énergiques."[†]

Duparcque, Désormeaux, Dubois, Depaul, enounce similar doctrines. So again Dr. Collins,† who may be said to represent the great Irish school of midwifery, says, "We may conclude that where the placenta is fixed *over or near* the os uteri, nothing but delivery will put a stop to the loss of blood."

The statement of Ingleby§ is strikingly emphatic : "And thus the placenta will undergo a continuous separation corresponding to the successive expansion of the neck, *until nearly the whole of its surface* is dis severed from its uterine connexion. From this it is evident that when the placenta is affixed either to the cervix or os uteri, *whether wholly or partially*, the vessels will become exposed on each successive detachment, and the ultimate safety of the patient will depend upon delivery by turning the child, excepting perhaps in two peculiar states, in which rupture of membranes is the only treatment offered to us in one case, and the safest, and therefore the most eligible, in the other."

"Pain, efficacious as it is in the accidental form of hæmorrhage, unless adequate to the expulsion of the child, is *neither to be expected nor to be desired*, to any material extent, in the unavoidable form, as it only renders the effusion more abundant. For though a certain degree of relaxation is necessary, it must be remembered that in exact ratio as the cervix uteri is successively developed, and the os internum progressively dilated, will an additional mass of placenta be detached from its connecting medium, and hæmorrhage necessarily be renewed."[‡]

By all these authors it is assumed as a law that the hæmorrhage is in direct ratio to the activity of the labour ; it is assumed that the cervix *cannot expand* without causing hæmorrhage. This assumption, partly true, involves a fundamental error or oversight, to which I shall presently advert. I must complete this sketch of the past and prevalent views by stating the modifications that have been introduced.

Dr. Robert Lee* thus sums up the modifications in practice to be pursued according to the varying circumstances of the cases : "When flooding takes place to an alarming extent in the seventh or eighth month, you ought first to ascertain whether or not the placenta be situated at the os uteri. It is impossible from the manner in which the discharge of blood takes place, to be certain of the fact ; for there are some cases of hæmorrhage from detachment of the placenta from the upper part of the uterus where the flooding occurs spontaneously, and to as great an extent as in cases where the placenta presents. As the treatment and the successful or fatal result of the case will, in a great measure, depend on the correctness of the diagnosis, the examination should be conducted with so much care and circumspection as to leave no room for doubt on the subject." Thus the motive for a difference in treatment is emphatically expressed. But in laying down the particular indications of practice and the measures to be adopted he is somewhat less absolute than Rigby or Collins : "The operation of turning, which is required in all cases of complete presentation, is not necessary in the greater number of cases in which the edge of the placenta passing into the membranes can be distinctly felt through the os uteri. Sometimes there is profuse and dangerous hæmorrhage when the placenta does not adhere all round to the neck of the uterus, but only partially. If the os uteri is not much dilated or dilatable, the best practice in these cases is to rupture the membranes, to excite the uterus to contract vigorously, by the binder, ergot, and all other means, and to leave the case to Nature : by adopting this treatment the operation of turning may be avoided with advantage in the greater number of cases of partial placental presentation. But if the hæmorrhage is profuse, has returned at different intervals, and a great quantity has been lost, and the constitution is really affected, it is the safest practice at once, if the orifice of the uterus is in a condition to allow the hand to pass without difficulty, to deliver by turning the child."

We thus see that a period arrived in obstetric history where a distinction in practice became established, founded upon this distinction between detachment from the os and cervix, and from any other part of the womb.

But gradually a further distinction obtained. It was observed, that the hæmorrhage attending cases in which the placenta had been adherent to one side of the os only, or partial placental presentation, was generally less dangerous than that which attended the central adhesion of the placenta over the os.

It is now generally taught, that in partial placental presentation it is enough to rupture the membranes ; and that afterwards the case may be left to Nature altogether. These cases, in short, have been classed, as far as treatment is concerned, in the same category as the cases of

* Gardien, t. ii. p. 404.

† Practical Midwifery.

‡ Uterine Hæmorrhage, 1822, p. 142.

§ Op. cit. p. 142.

† Op. cit. p. 406.

* Lectures on the Theory and Practice of Midwifery, 1844.

hæmorrhage from detachment of the placenta from parts of the uterus remote from the cervix. Wigand and Nägele especially insisted upon this, that the plug might be trusted to far more than was generally done, and that by the aid of this means, and the evacuation of the liquor amnii, many cases might be treated without turning.

The principle and rule of treatment of flooding before delivery that were generally taught until Professor Simpson revived and urged the doctrine of Kinder Wood, and Radford, may be expressed as follows:—

1. When the placenta is not found at the os uteri, or when it is found at one side only of the os uteri, trust greatly to Nature: use the plug, ergot, or, lastly, rupture the membranes.

2. When the placenta is found extending completely over the centre of the os, there is no safety but in delivery. The only doubt in this case is as to the time and manner of effecting the delivery.

(To be concluded.)

Clinical Lecture

ON

HÆMATURIA AFTER SCARLET FEVER.

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HÆMATURIA AFTER SCARLET FEVER; ANASARCA; PULMONARY AND CEREBRAL COMPLICATIONS; CONVULSIONS; DEATH.

IF further proof were necessary, to establish the doctrine that the morbid sequelæ of scarlet fever are to be traced to the imperfect elimination of the original virus, it might be found in cases in which the morbid symptoms of this secondary stage are not limited to renal disturbance, but where serious complications, both of the cerebral as well as the respiratory functions, co-exist. In these cases, where cerebral symptoms become developed during the presence of general dropsy, the urine being highly albuminous, with abundant exudation of the renal epithelium, there can be no hesitation in attributing the convulsions, coma, and death, to uræmic poisoning. The symptoms are strictly analogous to one form of cerebral disturbance frequently observed in cases of renal degeneration in adults, in whom the function of the kidneys is limited to the excretion of the water and albuminous constituents of the blood, and fails to eliminate the urea, the retention of which, acting as a poison in the blood, manifests its virulent power by the most fatal indications. It might therefore be assumed that these symptoms are referrible rather to the renal incompetency than to the febrile poison. Proximally, doubtless they are so; but it has been already shown in a previous lecture that the incipient stage of the renal disorder, the conges-

tion, the hæmaturia, are not accidental conditions, but arise undeniably from the secondary effects of the original febrile virus. There can be no difficulty, then, in tracing the convulsions and fatal termination as much to the imperfect elimination of the scarlatinal poison as to the intensity with which the system was in the first instance impregnated.

CASE.—Adolphus L—, aged six, was admitted into Burdett ward Feb. 10th. The child is reported to have had scarlet fever about a month since, and he has been attending as an out-patient for the last three days, but the gravity of the symptoms rendered him a fit object for admission. There is a considerable degree of constitutional disturbance, febrile heat of skin; pulse rapid; the tongue red, and inclined to become dry; the whole surface of the body is anasarca; the face is pallid, sodden, and puffy to a great extent under the eyelids; the scrotum is much distended and the prepuce œdematous; no indication of ascites. There is a purulent discharge from the left ear. The chest is moderately resonant throughout, but there are coarse moist mucous murmurs all over the left side, and with considerable bronchial wheezing on both sides; the respirations are 24; the pulse 96; frequent cough and fits of dyspnoea; heart-sounds natural. The urine is moderate in quantity, smoky in appearance, specific gravity 1.014, abundantly albuminous. The mother states that for several days in the previous week the urine was of a blood-red colour. The urine, examined by the microscope, exhibited many free blood-corpuscles; much amorphous granular matter, stained with hæmatin; and numerous fibrinous casts filled with blood-discs. Warm baths were ordered; the compound jalap powder, as a purgative; and saline medicine, with three drops of the tincture of digitalis to each dose. Two days afterwards the urine remained the same in quantity, but became much higher in specific gravity, 1.020. Free purging with the compound jalap powder was established on the 15th, with great advantage to the symptoms, the skin becoming cool, and the tongue less red and moist, the patient eagerly taking the farinaceous food prescribed. There was also considerable diminution of the œdema of the prepuce and scrotum, although the face still continued puffy.

Ten days after admission the urine became more copious; the smoky appearance had given place to a clear amber-coloured urine, of a specific gravity 1.007, and copiously albuminous. On adding nitric acid to the heated urine, the colour became first of a bluish green, and subsequently greenish black. I shall hereafter direct your attention to the nature of these pigmentary alterations in albuminous urine. They are of occasional occurrence in the progress of renal degeneration, and, so far as my experience teaches me, are conditions of very unfavourable significance. The pulse continuing good, and the appetite improving, the bowels acting freely with the cream-of-tartar purgative, the potassio-tartrate of iron was ordered.

On the 3rd of March, three weeks after admission, he was sitting up in bed, and is reported to have improved somewhat in appearance; the face being, however, still œdematous, particularly in the morning. The quantity of urine passed in the twenty-four hours had notably increased, but without any corresponding diminution in the anasarca of the surface, although, as compared with the week previous, the dropsy had much decreased. The specific gravity of the urine was very low, 1.005-6, and the quantity of albumen seemed increased, as its coagulation by heat rendered the contents of the tube nearly solid. Examined under the microscope, numerous casts of the tubes were visible, partly transparent, containing, however, epithelial cells, highly granular in appearance, with many scattered fat granules; there was also much free granular matter in the field. On this day, soon after he had taken his dinner of beef-tea and rice-pudding, convulsions suddenly came on; they were of the type of those intermitting movements so frequently seen produced by dentition or intestinal irritation; constant jactitation of the limbs, with rolling of the head on the neck. These continued for several hours, with only slight intermissions; the pupils were dilated; the breathing was laboured and quick; the pulse 110 to 120. Purgative enemata, and mustard poultices to the lower-extremities. The convulsions returned in paroxysms during the night, and in the intervals the patient was quite comatose, with stertorous breathing; the urine and feces passed involuntarily, and the child died at two P. M. on the 5th, forty-eight hours after the first convulsion. Unfortunately no post-mortem examination was permitted.

We have no information that can be considered satisfactory of the earlier stages of this child's illness, beyond the fact of its having had scarlet fever. Whether the eruptive period was distinguished by any untoward symptom, or whether desquamation of the cuticle followed, cannot be ascertained, as the mother seems to have paid no attention to these points. That the secondary affection was characterized by symptoms of unusual severity, the state of the child on admission very plainly testified, and it is to these symptoms I would specially direct your attention. First, the degree and character of the febrile disturbance; secondly, the renal and pulmonary complication; thirdly, the cerebral conditions and sequel. The fever was less of the asthenic type than is usual in these cases; it was more expressive of irritative action, such as usually accompanies local or regional inflammation; nevertheless, the dropsy and pallid look forbade any general or topical depletory measures. The state of the urine, the physical signs within the chest, each told of congestive conditions—formidable obstructions to the purification of the blood by respiration on the one hand, and of its depuration by urinary excretion on the other. What principle of treatment is to guide us in such complex states?

If I may sum up in a few words the broad

fundamental, therapeutical principle in such cases I would say, we must endeavour to bring into activity and act upon those functions and emanations which are not, or only in a moderate degree implicated in the morbid disturbance, and by their agency relieve, if possible, the oppressed and impeded organs. Thus, though the surface of the body is anasarcaous, we must endeavour to promote its exhaling power; and as the intestinal mucous surface gives no indication of sharing in the morbid state of the kidneys, we must bring its secretions into activity to purge the system of the accumulated fluid, and vicariously, for a time, relieve the kidneys of their office. The intimate sympathy between the kidneys and skin, and between the latter and the bronchial mucous membrane, when the latter is the seat of inflammation, would entitle us to expect the most beneficial results by vigorously promoting the cutaneous function; but unhappily, in these cases, the dropsical state of the surface of the skin precludes our obtaining much efficient aid in this direction. Warm baths effect oftentimes great temporary relief to the lungs; the breathing becomes less oppressed, and the secretion from the bronchial tubes more free; but the hot-air bath appears to be the most efficacious; there is not that exhaustion which is induced by a succession of warm baths, and, in my observation, the amount of relief felt by the patient is greater. To aid these external appliances, ammoniacal salines may be given internally with advantage. Active purging, however, yields the best results. It is, however, of importance to select appropriate means to obtain the greatest amount of relief, for it is not every purgative of the pharmacopœia which answers this purpose equally well. That purgative which acts most directly as a hydrogogue is the best adapted, but which, at the same time, is not followed by any disproportioned exhaustion, or by any torpid reaction. The combination of jalap and cream-of-tartar is most admirably suited to these ends. It acts quickly, without depressing the system, is not followed by inactivity, and induces copious watery dejections. This patient was much benefited by these purgative remedies: the febrile state was lessened, the tongue became moist, and doubtless, from the amount of fluid drawn away by the cathartic, may be explained the great increase in the specific gravity of the urine. There was manifest abatement of the dropsical condition, and the breathing was easier and expectoration more copious. Continuing this plan of treatment, the improvement became sufficiently pronounced to justify the administration of chalybeates. At the same time, the state of the urine, revealed by the microscope, together with the appearance of that peculiar pigmentary condition observed in combination with the albumen, suggested a very unfavourable prognosis, although I was not without hope that the renal degeneration had not reached that stage at which ultimate, though remote, recovery might be possible. The casts of the tubes were partly transparent, partly granular. The few epithelial corpuscles visible within the tubes

were filled with fat granules, and the tubes contained many scattered fat granules; highly refractive, and completely removed by ether. These microscopic conditions indicate an advancing stage of degeneration, and if spread through both kidneys, must be quickly followed by an imperfect elimination of the chief urinary constituents; and this was evident by the singularly watery state of the urine, its specific gravity not exceeding 1.005, but containing abundance of albumen, and this latter associated with a peculiar pigmentary matter, rendered visible after boiling by the addition of nitric acid.

It would be out of place here to enter into an investigation of the nature of the pigments that are occasionally met with in the urine, cyanurin, melanurin, &c. Experience tells me that the development of this pigmentary condition, in combination with albumen in the urine, is of the gravest import. It is always associated with the most advanced stage of renal degeneration, and in every instance in which I have seen it, it has been quickly followed by fatal results. Lehman, in his "Physiological Chemistry," (vol. ii, p. 428,) says, as far as his experience goes, it is only when uræmic symptoms have manifested themselves, that this peculiarity of the urine is generally observable, and this entirely coincides with my own. We should not then be unprepared for the development of unfavourable symptoms whenever this peculiarity of the urine is observed; so that notwithstanding the apparent improvement in the child's condition, even to the diminution of the dropsy of the surface, I expressed my fears at the time that this hopeful state would be but temporary. And surely nothing can exhibit the value and importance of frequent examination of the urine in such cases more forcibly than the fact here obtained, and the unfavourable inference deduced. In all other respects there was an apparent amendment, and if we had based the prognosis only on the general aspect of the patient, we might fairly have inferred that all was going on well. It is not of less importance in hospital practice than in private, nor is it less necessary amongst the poor than amongst the rich, to be explicit and candid in the expression of our fears or hopes to those anxiously interested in the welfare of the patient. It is as much the office of the physician to allay anxiety where that can be done with prudence, as it is his more distressing, but not less imperative duty to disclose his worst apprehensions, especially when he sees expectations of amendment cherished, which experience teaches him will be but temporary, and which must soon give way to less equivocal signs of approaching danger.

In the present instance, I believe the warning given to the mother was unheeded; the amendment was so palpable to her, that she would not believe but that our unfavourable opinion was mere conjecture. You may learn an important point here—namely, the suddenness and abruptness with which the symptoms of uræmic poisoning oftentimes commence. In some cases, parti-

cularly in adults, the indications are progressive; but here, all other things being promising, convulsions suddenly supervene; they intermit, but coma characterizes their remission, and the patient dies forty hours after the first indication of the urinous poison acting on the nervous centre. You may very properly ask,—Can nothing be done in this crisis?—Are there no remedies available for such a state? These cases of convulsion are not always fatal; sometimes in the intervals consciousness returns. Such cases offer a better prospect for remedial agents than where the patient remains comatose. In either state, however, an effort should be made to excite the bowels to active excretion. Enemata containing, according to the age of the patient, half a drop or a drop of croton oil, should be administered; and where the ability to swallow is unimpaired, you may expect some benefit from the chlorine mixture, the agency of which, according to the hypothesis of Frerichs, depends on its union with the carbonate of ammonia, into which the urea in the blood is converted, and which he considers to be the poisonous agent in these cases of fatal uræmia. I have in vain sought for proofs of this doctrine, but whether the hypothesis be true or false, clinical experience tells me that much benefit is often derived from chlorine administered in the form constantly employed by me.

Original Papers.

ON CATARRH AND ITS TREATMENT.

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THE essential phenomena of a catarrhal attack are: (1) General depression of nervous power, with or without notable pyrexia. (2) Local irritation signs. (3) Local hyperæmia, or inflammation, and exudation. The two latter groups of symptoms may be absent, or but slight.

The general depression and debility is the effect of the morbid influence upon the cerebro-spinal system. It is most marked in influenzal affections. The symptoms are, prostration, languor, weariness, or sore, beat, bruised feelings in the limbs, aching all over, shivering sensations. There is often decided impairment of the cerebral actions, the head feels confused, and the brain unable to think. The pyrexial period is subsequent to this of depression, and has been but slightly marked in most of the cases I have witnessed. According to Dr. Copland, it may assume a remittent type.

In Conjunctival catarrh the local irritation is announced by the sensation of grits in the eye, and spasmodic contraction of the orbicularis palpebrarum muscle. In Nasal there is sneezing, sense of fulness and stuffing of the passages, and "gravedo." In Pharyngeal, soreness on swallowing, and it may be irritable cough. In Laryngeal and Tracheal, irritable cough, soreness, and (in the former) alteration of the voice. In Bronchial, oppression and tightness of the chest and cough,

with dry or moist râles. In Gastric catarrh there is epigastric tenderness, nausea, sometimes vomiting, loss of appetite, and thirst in the early period. In Intestinal catarrh there occur griping pains, a tendency to, or actual diarrhœa, and more or less abdominal tenderness. In Vesical there is increased frequency of micturition, hypogastric uneasiness, and pain or irritation about the neck of the bladder. In Uterine there is pain and aching in the lower back or sacrum, sensation of weight in the pelvis, occasionally bearing down. Of course the above-mentioned symptoms are only adduced in illustration of the general statement that signs of local irritation exist in catarrhal affections.

In all the sites which catarrh affects, we know that visible *hyperæmia* is most marked in the early period, and that it gradually declines by pouring out of exudation. The inflammatory action in the earlier period of a catarrh approaches more or less closely to the sthenic (or tissue) kind, there being morbid attraction to the part affected. In the later periods, the inflammation is asthenic (or of nerve origin); in fact, it is rather a hyperæmia depending on a relaxed state of vessels. I have recently, in the *British Medical Journal*, mentioned the arguments which appear to me to establish the influence of the affected tissue in producing the phenomena of sthenic inflammation, and I will therefore only add here, that if we regard disorder of the tissue as the chief cause of the morbid action, we must also admit that the poison of catarrh may act as an irritant upon the tissues as well as paralytically upon the nerves. These modes of action seem in great measure to replace each other. In cases and epidemics where there is much nervous prostration, there is little of sthenic inflammation, and *vice versa*. At the present time I should say that there was a decided tendency to disorders of low nervous power, rather than to those of sthenic inflammation.

In both kinds of inflammation the exudation may take the form of actual hæmorrhage, varying in amount. This, however, is exceptional.

Catarrhal exudation is generally scanty at first, and becomes more abundant and opaque afterwards. In the air-passages, the urinary and genital canals, and in the large intestine, it consists of a tenacious plasma entangling pus corpuscles and more or less immature epithelium; in short, it is modified liquor sanguinis blended with a cell-growth. In the stomach, as far as I have seen, the tenacious thick mucus which covers the surface in catarrhal states, is mere plasma imbedding epithelial debris, without any pus corpuscles. I believe also that in the small intestine pus corpuscles are not formed; the muco-serous exudation contains no other shaped elements than columnar epithelium, either from the villi or Liebenkühn follicles. The particles from the latter are, however, often little more than nuclei, and when hastily thrown off they may much resemble pus corpuscles or pyoid globules. It thus appears that the simple mucous membranes are the most prone to generate pus globules. In the compound mucous membranes,

the epithelium being a more important element, and endowed with a higher life, does not so readily yield to the lower form of cell-growth. Tenacity is the special character of mucous plasma, and it is indeed a curious thing that the mere transit of liquor sanguinis through capillary walls and a basement membrane should produce so great a change. The action of the contained cell-growth can scarcely be the cause of the tenacity, otherwise it would not be absent in pus. One chief thing to be noted is, that as the quantity of corpusculating exudation increases the morbid blood attraction of the tissue declines. It seems as if the one force were changed into the other. If the morbid action in the tissue revive, the exudation diminishes, and probably (as in the case of the bronchi becoming more transparent) contains less cell-growth. It requires therefore some caution to allow the morbidly-excited force of the tissue to expend itself in the cell-growth of the exudation, before we endeavour to tone the relaxed vessels. Otherwise, if we attempt this while the tissue remains irritable, we shall but rekindle an expiring flame. This results from the law that all nerve-toners are tissue-irritants, so well illustrated by the different action of arsenic in sthenic and non-sthenic eczema. The state of the tissue is what we cannot directly observe in any way, and yet on a correct estimate of it the whole course of a case may depend. In the critical days and hours of a severe bronchial catarrh what a delicate point it may be to seize the right time for the administration of tonics, and to select that which shall be most appropriate! If we take a wrong step, we may never be able to recover the lost ground. Our more exact knowledge fails us here; we have to rely, first, on a sound knowledge of the great principles of pathology and therapeutics, and, secondly, on the tact and skill which come of experience.

A point which I think is not yet sufficiently understood is the almost invariable tendency to aggravation of catarrhal disorders during the night. I have observed this in catarrhs of various parts. It is commonly supposed to depend upon the accumulation of mucus, but I believe it is rather due to a lowering of the nerve-power during the night, and consequent dilatation of arteries, the vaso-motor nerves partaking in the general debility. From this cause the hyperæmia of the affected part becomes increased, more irritation is set up, and more exudation takes place. There are many facts of a like import. Asthmatic paroxysms are apt to come on after an hour or two of sleep. Those of pertussis are aggravated often at night. Fever patients are apt to sink during the night. Epileptic attacks, when the disease is yielding, often happen only at night. Malaria affects the system much more severely at night than by day. When I have had cachectic pustules on my fingers from dissecting, I have often observed that they suppurred afresh at night, after they had appeared to be healing during the day. In a communication made by Mr. Clarke to Dr. Graves, it is stated that the

electricity of the atmosphere is at its daily minimum at three A.M., and that the atmospheric pressure has one of its two daily minima an hour later. All these facts, especially when regarded in connexion with the manifest depressing influence which the catarrhal poison exerts on the nervous system at large, seem to me to give much probability to the opinion above expressed.

Causes.—Dr. Hyde Salter, in an able clinical lecture on Catarrh, adopts the old idea that cold is its principal cause, and considers that it operates by preventing the eliminative action of the cutaneous glands. I feel a very strong persuasion that this is far from generally true—that there is some other unperceived but real cause; and that when cold does occasion catarrh, it is not in the way Dr. Salter supposes. The following quotations afford evidence as to this point:—

Sir E. Parry states that though he and his crew were constantly in the habit, during a polar winter, for some months, of undergoing a change of from 80° to 100°, and in several instances 120° of temperature, in less than one minute, not a single inflammatory complaint (beyond a slight cold, which was cured by common care in a day or two) occurred during this particular period.

Alison, relating the effects of the cold on the French soldiers during the retreat of the army from Moscow, notices specially the benumbing of the mental faculties, the state of fatuity or idiocy into which they lapsed for hours before death, but never alludes to any occurrence of catarrh. It seems reasonable to conclude that there could not have been any prominent disorder of this kind.

A recent authoress, speaking of Lower Canada, where the winter lasts from December to April, and the thermometer is, in January, 35° below the freezing point, says that she has seen a wonderful effect produced, in the early stages of pulmonary disorders, by a removal from the damp, variable climate of Europe to the dry, bracing atmosphere of this country.

Dr. Granville writes: "It is a fact which will startle my readers, that 'a cold' is seldom to be heard of in St. Petersburg. There are, seriously speaking, so few diseases of the chest, catarrhs, defluxions, and feverish colds in the Russian capital, that I was quite surprised on hearing consumption quoted as an almost endemic complaint."

The Grand river (eastern fork of the Colorado) had to be crossed by swimming the cold flood, and by scrambling and leaping over blocks of ice. In spite of every such incident, of beds on the snow under the open heaven, and exposure to extreme severity of frost, snow-storms, and once a deluge of rain all night long, throughout this journey, says Mr. Carvelho, "I never took the slightest cold, either in my head or chest; I do not recollect ever sneezing. While at home, I was ever most susceptible to cold."

From these testimonies, it seems difficult not to conclude, that a considerable degree of cold, sufficient to check very materially the cutaneous

circulation, does not exert any perceptible influence in promoting the occurrence of catarrh. Its tendency seems rather to be the reverse.

From questions which I put to some of my out-patients who were much exposed to the weather, it appeared, on the whole, to result that there was no remarkable liability to catarrh, unless they were much in the way of heat as well as of cold. The untuning, relaxing influence of heat on the nervous system seems to me the more essential of the agencies concerned in originating catarrh. When a system in this condition receives a sudden *coup* of cold, and does not react, the shivery feelings which ensue are an indication that the nervous system has received a depressing shock, and this may issue in some local affection or one more general. The reproduction of ague attacks, in those who have suffered from them, by exposure to cold, is quite an analogous case. Dr. Copland notices the converse as a not unfrequent occurrence, catarrh being induced by "coming into an over-heated apartment out of a cold and moist atmosphere." I have met with more than one instance of catarrhal affections being either originated or aggravated by the supervision of thaw upon a frost. In others, again, cold has interrupted improvement. This difference must be referred, I think, to the peculiar states of the patients—in the one, the cold doing good by toning the vaso-motor nerves; in the others harm, by irritating the tissue. It seems to me very possible, that various causes, operating after the manner of depressing poisons upon the nervous system, may give rise to the phenomena of catarrh. The principal, however, in all the more severe cases, is, I believe, the presence in the atmosphere of some malarious miasm, which, when general and potent, occasions an epidemic of influenza, but which in minor amount affects only the predisposed.

Relations of Catarrh.—Dr. Copland considers catarrhal affections as having many points of analogy with rheumatism and erysipelas. Its relation to rheumatism is, I think, unequivocal, but it seems to me much more allied to aguish disorder than to erysipelas. Epidemics of influenza have been observed to undergo modification to remittent and intermittent fever, or to be attended with unequivocal signs of aguish disorder. Dr. Headlam Greenhow, in some remarks appended to a paper "On the Operation of Malaria," which I published last year in this journal, has recorded results of his experience to this effect. To the same purpose is the following case, which occurred in my own practice:—

A young lady, subject to bronchitis, was under my care, in one attack from which she quite recovered, using no other tonic than nitric acid and cascarrilla. Soon after this she had a second, but in the later period of this there came on quotidian cold fits, lasting till about noon, attended with much depression and persistency of the local disease. As soon as quinine was given, the aguish symptoms and the bronchitis got well. Her mother, an habitual sufferer from bronchitis dur-

ing the winter, had, very soon after, two perilous attacks of cardiac neuralgia, which were separated by an interval of nearly a month. The first was ushered in by all the symptoms of catarrhal attack during the previous day, but all traces of these and of bronchitis receded and gave way to most marked symptoms of aguish depression and disorder, which continued, though gradually yielding to treatment, for several weeks. Another member of the family had a severe nasal catarrh, and another a very sharp, brief attack of pyrexia succeeding to a cynanche.

The relation of rheumatism to neuralgia is notorious. Instances continually occur in which it is impossible at first to say whether the disorder is pure or rheumatic neuralgia. Now, as catarrh is certainly closely allied to rheumatism, there is much reason to consider it equally allied to neuralgia, which, as Dr. McCulloch well says, is another mode of malarious disease. The pain and general depression of a severe catarrhal attack manifestly indicate the operation of a poison on the nervous system, and the pains are, in fact, actually so many neuralgic.

If we suppose the morbid influence of catarrh affecting the mucous surfaces transferred to the vaso-motor nerves of the limbs and of the synovial membranes, we should certainly have results identical with those of rheumatism. The etymology, in fact, is correct, and catarrh is a *rheumatism* of the mucous surfaces. Another point, in which catarrh has an evident affinity to neuralgia and aguish disorder, is, that instances are not unfrequent in which attacks of neuralgic character are accompanied by exudation. Such are asthmatic paroxysms, passing off with free expectoration; lachrymation and salivation occurring with neuralgia of the trifacial; gastralgia, with its watery flux (pyrosis); sudden attacks of abdominal pain and diarrhoea taking place in some cases of remittent fever, and also as an independent affection; and certain cases of violent paroxysms of sneezing. Here the nerve disorder is temporary, and with it the vascular congestion subsides, and the exudation ceases. If it were more persistent, the result would be catarrh.

Treatment.—The treatment of catarrh is sufficiently rational and satisfactory. In cases where the local disorders are wanting, or nearly so, and the general depression and prostration, without much pyrexia, are the prominent phenomena, I find carbonate of ammonia, five grains, in cascarrilla infusion, three or four times a day, of great service. In somewhat more pyrexial states, the ammonia is better given in equal parts of camphor mixture and liquor acetatis ammoniæ. Tincture of hyocyamus, or tincture of cannabis indica, or (if there be diarrhoea) Battley's solution, may be added to the foregoing. Camphor and henbane, or morphia, or Dover's powder, may procure comfortable rest in many cases at night. As improvement goes on, citrate of iron and quinine, with tincture of nux vomica, or quinine alone, may be substituted for the ammonia. If in any case there should be much pyrexia, citrate of potash, with bicarbonate

of potash, and dilute hydrocyanic acid, guarded also, perhaps, with a little Battley's solution, will be very appropriate. In many cases, rest in a warm bed for a day or two, with wine negus as a gentle stimulant, and equalizer of the circulation, will alone do very much to restore the system from its depression. There is no need for any rigid diet, nor for any attempts at elimination of the catarrhal poison.

In all local catarrhal affections, the general indications are the same—viz., in the early period, to reduce sthenic inflammatory action (supposing it to exist), and in the later, to give tone to weakened vessels and nerves, and to calm irritation. In catarrh of the *air-passages*, ipecacuanha, half a grain to a grain, combined in a pill with one or two grains of extract of conium, and a little morphia, if there be much nervous irritation, and given every one or two hours, so as to maintain a degree of nausea for some time, is very effectual in combating sthenic inflammation. The saline and alkaline mixture, with hydrocyanic acid, mentioned above, should also be taken every three or four hours. There seems to me a decided advantage from giving the pill and mixture separately, as the nauseating influence of the ipecacuanha can thereby be regulated more easily without interfering with the saline. Very decided cases of bronchitis may be conveniently dealt with in this way; some, however, occurring in the more vigorous and robust, may require the more potent influence of antimony. Mustard poultices or turpentine stupes, and in the later periods blisters (if necessary), may all be of much service. In cases of tracheal catarrh, where the cough is very distressing and obstinate, small blisters, applied just at the top of the sternum, are often of much avail. If there be much constitutional depression, together with the local catarrh, the skin cold, and the pulse feeble, ammonia, with the compound spirit of sulphuric ether, in cascarrilla infusion, is very appropriate. Tincture of cannabis indica is a good sedative, which may be given with the above, or the extract in a pill at night; it certainly has a notable effect on the cough in not a few cases. In some cases of this character, there are symptoms of constriction of the air-tubes (asthma), to meet which liquor of the arseniate of potash may be added with advantage to the ammonia mixture, or extract of stramonium be given in pill two or three times a day, or at night only. When the catarrhal affection is clearly asthenic, the râles moist, the expectoration free, and the pulse weak, the greatest benefit will accrue from the use of nervine tonics, as nitric acid, strychnine, quinine. With these, sedatives may also be employed, as well as cod-liver oil, to aid in improving the various nutrition processes. It is not unfrequently a cause of some perplexity to determine at the commencement of the treatment whether a tonic or contra-stimulant plan is to be adopted. Sometimes I believe only the result of a trial will show. Senega, preceded by an emetic, is most appropriate to cases of obstructive bronchitis, or, as it has been termed, suffocative

catarrh. I have seen it turn the balance in a grave and most perilous case, when all other means had failed. Dry cupping is a most useful aid in chronic bronchial catarrh; it is more cleanly and convenient than mustard poultices, and the patient's attendants can soon be taught to do it themselves, if the practitioner cannot spare the time. The balsams and squill I regard as milder forms of nerve-toners, appropriate to cases where either the stronger tonics cause irritation of the tissue, or the morbid action remains at a grade intermediate between sthenic and asthenic inflammation. I cordially agree with Dr. Copland in his reprobation of the practice of maintaining a copious expectoration for an indefinite time, which the mere routine administration of these drugs is apt to keep up.

Though I have unfortunately a good deal of (personal) acquaintance with *nasal* catarrh, I must confess I do not know of anything that has much effect upon it during the stage of active defluxion (tissue inflammation). Dr. Watson, however, speaks positively of the good effects of an opiate, and I have seen inhalation of the fumes of opium also recommended. I suppose its action must be that of a tissue sedative, somewhat as in peritonitis. When the flux is asthenic, though it may be most copious, I can answer for the good effects of bottled stout and strychnine, and the experience of others is to the same purpose. The *dry* plan of treatment (albeit I hold it in abhorrence) is by no means unscientific; it regards the need of diminishing the strain from within upon the weakened bloodvessels. I think it, however, better and pleasanter to try to tone them.

In *conjunctival* catarrh, even the most severe, the case is nearly the same as in nasal. We possess ~~no~~ *no* contra-stimulant drug to be depended on for subduing the sthenic inflammation. We are, therefore, obliged to resort to direct means, as local bloodletting, and the application of nitrate of silver. The arrest of severe conjunctivitis by Mr. Guthrie's ten-grain ointment, or by the use of solid lunar caustic, is certainly a striking therapeutic effect, even if it cannot be relied on as a constant one. The exact mode of its action must remain uncertain, but I suppose we shall scarcely err if we consider it as a "vitality-modifying agent," to borrow an expression of Dr. Bennett's. On cutaneous inflammation it will often act similarly as stated by Mr. Higginbottom. When the sthenic period has passed, nerve tonics (quinine, &c.) have the best effects, as elsewhere.

In the treatment of *gastric* catarrh I do not know that we have any contra-stimulant drug to be at all ranked with ipecacuan and antimony in their action upon the bronchial tubes. I think I have seen good from the administration of mercurials, as gray and Dover's powder, of each two grains and a half three times a day, for a few days; but I am not so clear about their good effects in gastric as in intestinal catarrh, where they are most marked. Leechee, followed by a continued poultice or fomentation to the epigastrium, will be of much benefit in the earlier periods, and a blister in the later. Lumps of ice,

and a saline and alkaline mixture, with hydrocyanic acid every two or three hours, will be very grateful as long as there is active inflammatory movement. When this has quite, or nearly, passed by, tannin, in pills, with muriatic acid, either alone or conjoined with dilute hydrocyanic acid, forms an excellent tonic, and this again may be followed by the stronger ones, as quinine or strychnine. Bismuth appears to me to find its opportunity in the intermediate grades of inflammation, or those which contain a good deal of the neuralgic element. It certainly arrests pain and muco-watery profluvia, and seems to act, in part at least, as a nerve sedative. I have generally given it with soda or magnesia in mucilage, together with hydrocyanic acid. In many cases tannin may be given at the same time as bismuth, but I regard it as a grade nearer to the tonics. Nitrate of silver does not seem to me to belong properly to the remedies for gastric catarrh; it finds its exact opportunity in gastric hyperæsthesia. Lactic acid, or pepsine, with the meals, is of course to be recommended if there be any abiding debility of the stomach, and failure of digestive power after the above means have been fairly tried. Certain conditions of the stomach, by no means unfrequent at the present time, when there is pain and soreness, nausea, and rejection of muco-watery fluid, mingled sometimes with blood, and which are cured by quinine with opium, or citrate of iron and quinine with nuxvomica, form a transition stage between catarrhal and neuralgic affections. I strongly suspect that cases allied to these, where there has been a good deal of bleeding, are often wrongly set down as gastric ulcer. I have little doubt that, especially in conditions of aguish disorder, when internal congestions are apt to occur, the mucous membrane of the stomach may bleed like that of the nose, without any ulceration. Perhaps this may apply to some of Dr. Brinton's observations.

I must notice, in passing, how unsatisfactory the term "*dyspepsia*," so often applied to all stomach ailments, is. It would be little more absurd if we denominated all pulmonary affections *dyspnoea*. Surely the existence of gastric catarrh, gastric neuralgia and hyperæsthesia, gastric degeneration, and gastric cancer, is perfectly established, and we ought to be able to refer every case to a position approximating more or less closely to one or other of the types just named. These ideas ought to be common and familiar, ought to be implanted in the minds of our students, and appear prominently in our text-books.

The treatment of catarrh of the *small intestine* is very similar to that of the stomach, but salines are generally to be avoided. Repeated small doses of gray and Dover's powders are of very great benefit; and if the urine is turbid with lithates, carbonate of soda should be given in infusion of lemon or orange peel. As long as there is anything like tenderness, warm fomentations should be applied to the abdomen. In some cases repeated small doses of castor oil seem to modify beneficially the irritable state of the mucous sur-

face; they should be given with a few drops of tincture of opium. Bismuth and tannin may be of much value after the earlier stage has passed away, and in protracted cases nitric acid and liquor of per-nitrate of iron are found efficacious.

Catarrh of the *large intestine* is identical with the milder forms of dysentery. Its treatment is remarkably similar to that of bronchial catarrh. Ipecacuanha frequently administered is of great avail in subduing the sthenic inflammatory state in each, and the asthenic is benefited by very much the same tonics.

The *bladder* is one of those regions of the body which seem to be less under the control of remedies than many others. Except bloodletting and opium, there seems to be no remedy known which has any effect in subduing sthenic inflammation of its mucous lining. Copaiba is often of great power in diminishing the secretion of mucus, and I have found benefit also from strychnia, in chronic cases, as a tonic to the relaxed vessels. But it is most difficult to arrest the morbid action completely, and, except in the young, where the vital powers are more elastic and capable of recovering themselves, I doubt whether it is to be done. The principles of action are, however, the same as in other catarrhal states.

In *uterine* catarrh there is rarely any opportunity for dealing with the stage of sthenic inflammation, and the task of the practitioner is mainly to give tone again to weakened, relaxed, and congested vessels. An occasional blister to the sacrum may be of much service, but reliance is chiefly to be placed on cold astringent injections effectually employed (vide Dr. Tyler Smith's directions, pp. 198-200 of his work), on the alum tampon, and on various astringents and nerve tonics administered internally. Dr. F. Churchill mentions ergot, tincture of muriate of iron, decoction of hæmatoxylum, and balsam copaiba, and to these may be added quinine and strychnine, which I have found of decided efficacy.

It may be thought that in thus reviewing the common catarrhal affections of the various mucous surfaces, and classing them all as catarrhal, I have merely used one term for another without any gain. I am, however, strongly of opinion that it is a real gain to be able to view diseases as far as possible as the result of general or widespread influences, which, operating on the whole frame, produce in similar tissues similar effects, and which are to be met and counteracted by similar means. The practitioner who regards disease in this light will surely be stronger, and better prepared for emergencies, than he who considers them as so many separate entities. I have also desired to maintain and illustrate the view that the treatment of catarrh is to be directed simply to meet and obviate the effects of a depressing, or irritating poison, without in any way endeavouring after its elimination.

Albion-street, Hyde-park, July, 1867.

THE PROBE-POINTED CATHETER FOR EXTREMELY NARROW STRICTURES.

By HENRY THOMPSON, F.R.C.S., M.B.,

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THERE is no axiom more true or more important in relation to the employment of sounds and catheters in the urethra than this—viz., that danger increases in an inverse ratio to the magnitude of the instrument. In other words, the smaller the catheter, the greater the probability of injuring the canal. It is impossible to lay too much stress on this fact, or to impress too strongly its importance upon the student before he commences his practical acquaintance with catheterism on the living.

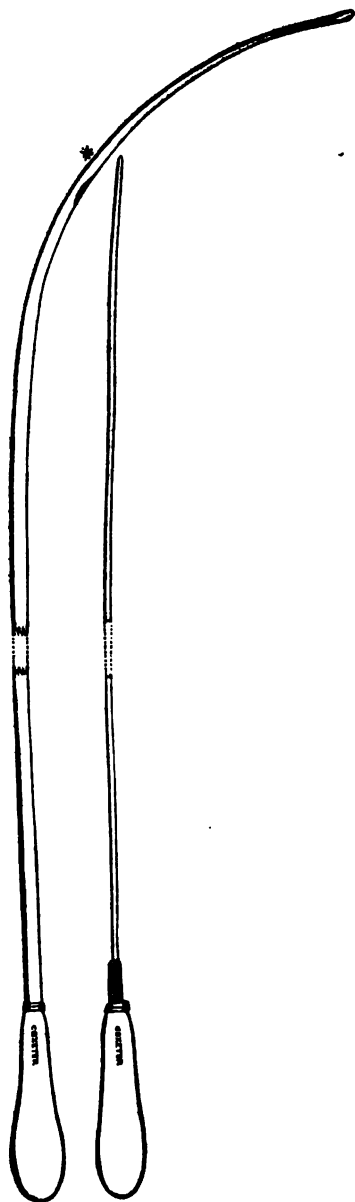
But, on the other hand, it is not to be denied that there are some few cases of stricture in which the contracted part has become so narrow that an ordinary catheter will pass through it. I have verified this fact on the dead subject, where, neither inflammation nor spasm existing, the organic obstruction remains simple and uncomplicated; and, in common with others, I have occasionally found a stricture in such circumstances so narrow, that the finest probe only could be insinuated through it.

Such cases as these long resist the most patiently and carefully made efforts during life, and, despite of all the adjuncts which medicine, regimen, and diet afford, valuable as they are in all cases of difficulty, do occasionally long hold out against the surgeon.

These instances are very rare. But I am inclined to believe that the secret of success for them, all other means failing, is to use a sufficiently small instrument. It is unquestioned that there are some strictures so narrow that a catheter of the smallest size, slender as it is, will not pass them, nor indeed any instrument which is not some degree smaller. Hence the employment of catgut and elastic bougies of extreme tenacity. Such are necessarily, however, very unreliable instruments, from the impossibility of commanding them in their progress along the urethra, or of even knowing where they go. At all events, the most satisfactory test of success, which should never be dispensed with when it can be employed—viz., the outflow of urine through them, is with such instruments impossible. Hence it is, then, when requiring the smallest size of Syme's staff, I have found the advantage of employing one with a bore throughout. The appearance of the urine at its handle is the best and safest guarantee of the position of a small instrument; and the smaller the instrument, the more necessary is this guarantee.

In the autumn of 1855, I had a case which foiled several carefully made attempts, aided by the means which medicine suggests in such circumstances, and which need not here be detailed. The catheters which I had long used for such cases—viz., two sizes less than No. 1, were obviously too large. The patient passed the urine only in small drops, and was wholly incapacitated

by his complaint from business of any kind. I then devised an instrument, which, while it was as small if not smaller, than any catgut bougie, was also capable of permitting the urine to flow through it. It was at the same time as strong, as firm, and as solid in the hand as any catheter of the size of No.



The curved and longer of the two figures is the "probe-pointed catheter." The eye is seen to the right of the asterisk, which marks the point at which the channel ceases. From the asterisk to the termination the instrument is solid.

The lesser and straight figure represents the steel stilet which screws into the catheter, and fills its interior.

2 at least. In that case it was perfectly successful. I drew off the patient's urine with it, tied it in his bladder, replaced it by larger instruments, and finally cured him by dilatation. I have employed it in three similar cases since, in which I

could not succeed in introducing small catheters, and in all it led the way to a cure by dilatation; that is to say, to a condition in which the patient continues free from every symptom of complaint or annoyance by occasionally passing for himself an instrument varying in size from No. 8 to No. 10.

One of these patients to whose stricture this instrument was the key, had, after repeated failures in London, tried the resources of Paris without success, no one having before succeeded in introducing an instrument into the bladder. That gentleman now enjoys, after twenty years of suffering, excellent health, passing for himself at present a No. 9 catheter once a week.

The instrument, which is made of silver, will be seen, by reference to the subjoined engraving, to have nearly the form of a catheter. Its last two inches, however, are made perfectly solid. This extremity can therefore be made of any size or form desired, these not being limited by the necessity for a channel inside. However small it may be necessary to use an instrument in any given case, so small can this probe-pointed extremity be constructed. At about two inches and a half from the end, the channel begins, and the small eye is placed, the instrument increasing in size first to that of a No. 1, and then to nearly that of No. 2, which is continued throughout the entire shaft. Finally, the whole is strengthened by a small steel rod or stilet, which accurately fills the interior, and to which the handle is attached. The small eye cannot therefore be blocked up with mucus or other matters. Moreover, this rod screws in, and gives to the instrument the most perfect solidity. Having succeeded in passing the stricture, it is carefully insinuated a little further, when, on unscrewing the handle, the urine will issue from the external orifice, by drops only, it is true, on account of the smallness of the internal orifice, but in a manner which in time relieves the patient, while it assures the operator of his complete success. It may be called "the probe-pointed catheter." It is needless to add, that the utmost care and lightness of hand are absolutely necessary in the management of so small an instrument; and any deviation from such practice is extremely hazardous. Certainly its use cannot be recommended to beginners, or to those who are not well accustomed to the use of instruments in the urethra.

I may add, that the handle *being removed with the stilet*, it is easy to screw in its place a small steel rod, and slide over it a fine gum-elastic tube, made of silk, into the bladder, if desired, after the solid instrument has been retained a few hours, thus insuring the absence of difficulty in reaching the bladder a second time, a method of proceeding which Mr. Wakley has done much to introduce into practice. In many hands such a plan would be the safest and most desirable. Further, the small instrument should not be retained longer than is necessary to facilitate the introduction of the second. This plan being employed for the first step, if preferred, the remaining treatment

may be conducted in any manner which the circumstances of the case appear to indicate.

Wimpole-street, Cavendish-square, 1867.

SUMMARY OF SEVENTY-FIVE CASES OF ALBUMINOUS URINE.

By THOS. R. HEYWOOD THOMPSON, M.D., Liverpool.

SINCE the pathology of the urine has of late years been more generally taken into account in the investigation of disease, and the examination of it conducted with greater care, the more frequent discovery of the albuminous condition in cases not essentially nephritic has demonstrated that this ominous feature results not so often from change of structure in the kidney—Bright's disease and its modifications—as from more functional derangement, brought on by over-work in eliminating certain morbid products from the blood in some diseases, or while operating compensatively (so to speak) in others. In proportion, too, as the urine has been submitted to the test of the microscope, as well as the ordinary tests, have we been enabled to estimate more surely the import of those cases in which albuminuria has obtained. The mere detection of less or more flocculence on heat and nitric acid, however portentous, is comparatively valueless without the aid of histology. The former merely indicates a condition, striking the alarm-note, as it were, but the latter brings under review the products of the change, and very often shows the exact stage reached in the complication. What the crucible is to the toxicologist, we may hope the microscope will become to the investigator of this pathological state—affording conclusive evidence. To use the words of Dr. George Johnson, “a microscopic examination of the urine is essential for the formation of a correct diagnosis;” “a microscopic examination of the urine is the best and only means of ascertaining the epithelial deposit;” “for the accurate discrimination of all forms of renal disease, the microscope will be found an invaluable aid;”—or of Mr. Simon, who states, in his admirable paper on the Kidney, published in the 30th vol. of the “Transactions” of the Medical and Chirurgical Society of London, “so much more delicate is the microscopical than the chemical test, that it has twice happened to me lately, in cases of scarlatina, to find groups of blood corpuscles in the urine, when nitric acid had given no precipitate visible to the naked eye.”

I have therefore thrown into a tabular form the most prominent histological features of seventy-five cases, in which the urine was found to be more or less charged with albumen,—accompanied with such few notes as were considered worthy of being jotted down at the time. The figures specifying the numbers in each section, “granular,” “oily,” “waxy,” &c., do not always coincide with the total of each disease, as it not unfrequently happened that two or more abnormal characters were noted. So, too, the absence of heart-disease from so long a list may surprise those who know how often the two states are associated; but as in

all the cases coming under my notice in which they co-existed, the kidney affection, as far as could be traced, seemed to have taken the precedence, or at least had become the most prominent, they were so noted. Even two cases of asthma, of long standing, in which valvular disease existed, together with Bright's disease, are classed in the latter, although it is possible that, could the cases have been traced *ab initio*, the asthma and valvular disease might have been proved to have led to the kidney complication.

	Total	Granular Casts	Oily Casts	Epithelial Casts	Waxy Casts
Bright's disease.....	20	8	9	4	1
Scarlet fever (malignant). Eruption not well developed.....	2	1	1	1	1
Scarlet fever (anginose). Eruption well developed.....	17	1	1	1	1
Scarlet fever. Eruption irregular; only out a day or two.....	4	1	1	1	1
Scarlatinal throat, without eruption.....	2	1	1	1	1
Rheumatism.....	2	1	1	1	1
Gout (obscure).....	1	1	1	1	1
Typhus fever (second week).....	1	1	1	1	1
Kidney, inflammation from calculus f.....	1	1	1	1	1
Catarrh.....	2	1	1	1	1
Pneumonia.....	2	1	1	1	1
Erysipelas.....	1	1	1	1	1
Liver, torpor and derangement of.....	2	1	1	1	1
Peritonitis.....	1	1	1	1	1
Phthisis, in latter stages.....	4	1	1	1	1
Chlorosis.....	4	1	1	1	1
Oxaluria (strongly marked).....	4	1	1	1	1
Phosphatic diathesis (strongly marked).....	2	1	1	1	1
Pregnancy, latter months.....	2	1	1	1	1
Uterine diseases.....	5	1	1	1	1
Malignant disease of the bladder.....	1	1	1	1	1
Free use of turpentine, internally.....	2	1	1	1	1
	75	29	41	22	12

Of ten cases of morbus Brightii, seven ran the variable but downward course of that disease when confirmed, and terminated fatally. Three were apparently kept in check by appropriate treatment, but are still delicate. Manifest hypertrophy of the heart existed in three cases; valvular disease, with hypertrophy, in four; while three had no appreciable derangement of that organ. The waxy form of cast did not present so frequently, as we were led to expect from the experience of others. In one case, the details of which were submitted to Dr. Bence Jones, the quantity of urine passed daily during the last fortnight of life, only averaged nine ounces, and was seven times as low as seven, the specific gravity continuing high, never less than 1032, and one day as high as 1045. Under the head of scarlatina I have twenty-five cases, in which there was some amount of flocculum on heat and acid, and also the examination of a considerable number of weeks. I can confirm the statement of Dr. Begbie, that in almost every case of scarlatina, the urine will be found to have traces of albumen, but in the majority it is only to be detected by the microscope in the shape of free or aggregated blood corpuscles. In several of the cases, the eruption was so irregular and evanescent, that but for the sore throat, spreading, amongst others, eruptively, and the albuminous condition of the urine afterwards

they would have been difficult to diagnose; while in two cases of scarlatinal throat, *without eruption*, it extended to others in the eruptive form; in both cases there was albuminuria. Two cases in which there was scarcely any eruption, or more properly speaking, suppressed, were followed by general dropsy.

Illustrative of the irregular manner in which this disease sometimes runs through a family, the subjoined may not be out of place. The eldest son, aged sixteen, was the first attacked, and had simply scarlatinal throat and strawberry tongue, followed by albuminous urine, and excessive debility. An elder sister, aged nineteen, had the eruption strongly marked, running the usual course. A younger sister, eight years old, had the eruption only irregularly for a day and a half, with intense sore-throat. A still younger had the eruption running the usual course. Another, yet younger, had a few livid blotches, with great fever, and had sore-throat, followed by albuminuria. The youngest, a baby, had the eruption out vividly, without throat affection. Within the last month I have had two cases of checked (irregular) scarlatina, in which intense albuminuria, with blood and casts, succeeded within four days, and this notwithstanding here (as in every case where scarlet fever is suspected) warm, or vapour baths, to encourage the eruption, were at once ordered.

Of the cases of rheumatism, one was complicated with urgent pericarditis, and the urine continued throughout the attack, and for nearly three months afterwards, very albuminous, with abundance of epithelial casts and some blood, but gradually subsided under the continuous use of aperients and diaphoretics. In a case of obscure gout, still under observation, the albuminous condition recurs with every threatening, and only disappears on the decline of the arthritic symptoms, eliminating great quantities of lithates, and granular casts—a very undesirable symptom. Three cases are noted, in which the symptoms were those of well-marked catarrh, followed by dropsy, the urine being very albuminous, but soon losing this ominous character by restoring the free action of skin and bowels. Three cases of very decided albuminuria had no other appreciable origin than torpor and derangement of the liver; in one case the epithelial casts were freely thrown off for many days. In two persons suffering from intense pneumonia (in one, both lungs), the albuminous condition, from free and aggregative blood corpuscles, was very strongly marked for about a week. So, too, in a case of severe general peritonitis, probably extending to the serous covering of the kidneys, the urine was charged with waxy casts and free blood discs for ten days. The not uncommon condition of albuminuria in the latter stages of phthisis was noticed in four cases; in one, where the urine was carefully examined many times, the albumen present was so considerable as to cause a jelly-like consistence on heat and acid, and yet there was no trace of tubular casts or blood, nothing but immense numbers of spermatozoa. In this case some of the fibrinous part of the blood must have drained off by the kidney.

In four well-marked cases of chlorosis, accompanied in three with anæmic bruits, the urine was albuminous for a considerable time; in one, continuing three months, with waxy casts; in another, the anomalous condition just described—i.e., highly albuminous urine without a trace of tubular cast or blood—existed. Iron had the usual beneficial effects with all of them. Of seven cases, where either oxaluria or a strongly-marked phosphatic diathesis was present, with albuminous urine, the blood globules were mixed with a considerable amount of vesical epithelium, as well as the characteristic crystals, leading to the inference that mechanical irritation of the surface of the bladder had been the chief cause. In two cases, where the urine was albuminous in pregnant women, there was an interesting contrast; this condition came on in one of them probably only a few days prior to her confinement, and was not strongly marked, yet she had slight convulsions; in the other—aged thirty-eight, a primipara, who had for years been suffering from a sacculated condition of the œsophagus and almost total obstruction to swallowing anything solid,—the urine was loaded with free blood corpuscles and waxy casts for upwards of two months before her confinement, and, notwithstanding a very long and severe labour, there was never once a threatening of convulsion; it is true, however, that as soon as the local hyperæmia was discovered a few leeches were applied over the region of the kidneys, and other means used to avert the contingency. In the cases of uterine disease, extensive ulceration of the os, the albuminous flocculence was traced to the presence of free blood discs, much vaginal and uterine epithelium, the result of the accompanying discharges. Two persons who had used turpentine improperly for several days (one for gravel, the other for tapeworm) were affected for upwards of a fortnight with albuminuria, blood having been freely passed and some fibrinous blood casts; and the irritation of the kidney was intense.

A few short cases still further illustrative of the importance of a microscopical examination of the urine, *whenever there is the slightest trace of albumen present or suspected*, may not be an unfitting termination to this paper. One case of malignant disease of the bladder is tabulated. This patient, who had passed considerable quantities of blood from the bladder for several years, had consulted the most distinguished surgeons of London and Dublin—was sounded by two of the most eminent practitioners in the former place, and although no stone could be detected, so strong were the evidences of that malady that the sufferings were declared to arise from calculus; others believed it to be the irritation of gout; the kidney, too, was suspected, as the urine was always albuminous: yet no one thought of applying the microscope. Soon after being consulted by this patient at the recommendation of his medical attendant, it occurred to me, on seeing the nasty strawberry-and-cream looking, slimy deposit, after the urine had stood for a short time, to subject this to microscopic examination; on which—

strengthened by several successive results, there being no trace of kidney tubular casts, but abundance of free blood corpuscles, numerous caudate and filamentous multi-nucleated cells characteristic of encephaloid cancer—the case was pronounced to be one of malignant disease of the bladder, an opinion fully confirmed on the death of the sufferer eighteen months afterwards, when both bladder and kidneys were found to be affected with encephaloid disease. Mr. Coulson, in his compendious work on the Bladder, says of such cases: "In general we are never certain of the nature of the disease until the parts are examined after death." After such a case, we may hope the microscope will enable the diagnosis to be more certain?

In another case, where the patient, upwards of sixty, was attacked with frequent severe hæmaturia, attended with much irritation of the bladder, and became despondent, being under the impression that as his father and two brothers had died of the same symptoms, with presumed malignant disease, at about the same time of life, his was likewise to terminate in the same way, several of the symptoms led to that conclusion, until, on carefully examining the character of the urine under the microscope, no trace of diseased structure was discovered; only abundance of free blood, vesical epithelial scales, and numerous large crystals of triple phosphate. The case was declared to be one, probably, of simple irritation; treated with acid tonics, gallic acid, and buchu; and gradually recovered.

In another case, a middle-aged patient, presented with anomalous symptoms—melancholy expression of countenance, sallow complexion, suffering from lumbar pains, wasting, and lowness of spirits; and, to render his case more doubtful, the urine was found slightly albuminous. The microscopic test was applied: free blood corpuscles, a few kidney casts, with abundance of octahedral crystals of oxalate of lime, were detected; the case was easily seen through, mineral acids and tonic purgatives ordered, with regulated exercise and diet; and the patient rapidly lost his threatening symptoms. "Necdum finitus Orestes:" such instances could be greatly multiplied.

It is to be feared in too many cases that, the symptoms pointing almost conclusively to a particular disease, as long as they do not indicate kidney affection, every secretion except the urine is noted. How common it is in fevers, exanthems, and inflammatory diseases, to administer diuretics, without a thought as to the condition of the kidneys; nay, the very fact of the urine being scanty, which should put us on guard, is made the pretext for acting upon organs already perhaps overtaxed and unfit for work. It is not unreasonable to suppose that many a case of Bright's disease, or other chronic form of nephritis, has had its origin in the mistaken attempt to relieve the system by diuretics, when the kidneys were previously overwrought in eliminating from the blood what the lungs or the skin were incapable of effecting. The microscope and test-tube will, if

properly applied, often save from such errors; and not only so, but will direct us to the right use of those means by which the kidneys can be brought safely to play their part in restoring the lost balance of health.

Algburth, 1867.

OBSERVATIONS ON THE ARCUS SENILIS OR FATTY DEGENERATION OF THE CORNEA.

By EDWIN CANTON, Esq., F.R.C.S.,

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"Disease anticipates the ravages of time, and there is no more interesting part of our subject than that which refers to its relation to those various affections which impair nutrition. . . . In young, as to age, become old as to structure."—W. F. BARNES: *Fatty Degeneration*, p. 6. London: 1866.

PART IX.

Of the co-existence of the Arcus Senilis with Phthisis.—On the 9th of June, 1855, a male patient, aged forty-five, affected with phthisis, was admitted into the Charing-cross Hospital, and died from this disease on the 11th of August following. He stated that his complaint had commenced two years previously.* His eyes were of a bluish colour,† somewhat prominent, at the cornea of each presented a well-marked arcus of fatty degeneration.

At the autopsy, I found a very large cavity occupying the upper lobe of the right lung, and several smaller excavations existed in the lower one. The left lung was densely studded with tubercles in various stages of softening. The heart was of the average size, but pale, flabby, and friable.‡ Dr. R. Quain, in kindly reporting to me on its histological conditions, observed: "There is no doubt whatever as to its structure being in a state of fatty degeneration. I examined both ventricles, and found each to be in a like degenerated state." The arch of the aorta presented several atheromatous patches of varying size and consistence, and many similar ones in

* "The average or mean duration of consumption has been computed to be about two years. This is a different thing, you will be pleased to observe, from its ordinary duration."—T. Watson, M.D. *Lectures on the Principles and Practice of Physic*, third edition vol. II. London: 1848.

† "It was the opinion of some physicians of former days, that persons with blue eyes enjoyed an immunity from consumption. I am at a loss to understand how such an opinion could have originated. The colour of the eyes of patients is amongst the particulars recorded at the Consumption Hospital; and the result, viz. it shall be given, on a large scale, may help us to determine positively whether, as respects phthisis, special liability, or immunity is associated with any particular colour of the eyes. The conclusion must be made with statistical statements applicable to a country generally, since the inmates of Brompton Hospital come from all parts of the country, may be considered to represent a general population of England. Amongst a hundred consecutive cases lately examined, in reference to this inquiry, of fifty-one cases, six are specified to have had blue eyes—one of the six men, and five described as greyish-blue: of forty-three women, four had blue eyes. You perceive that the relative proportion is nearly the same in the men as the women; and, although the numbers are not large, they are sufficient to prove that, at the present time, individuals with blue eyes enjoy no immunity from consumption."—T. Thomson, M.D.: *Lectures on Pulmonary Consumption*, p. 15. London: 1864.

‡ By a series of comparative experiments, carefully instituted Dr. Cleland has ascertained that, with the exception of the heart and heart, the absolute density of most organs—but more especially of the lungs, liver, and spleen—is augmented in tubercular phthisis.—*Med.-Chir. Review*, Jan., 1866.

isted along the course of this vessel and in the primitive iliac arteries.* The liver and kidneys were carefully examined by Dr. Hyde Salter, who stated with respect to them :—"The liver was, I think, the most fatty I ever saw; its structure was almost entirely supplanted by free oil-globules. The liver-cells, in most cases, were broken down and fragmentary; some few were perfect, but all were full of air-globules.† The kidneys were fatty, but less so; there was less free fat, which was more confined to the secreting cells, where it was more abundant."‡

I regret that in the above case I should have

neglected to examine the condition of the minute bloodvessels in connexion with the state of the lungs from which the patient died. Analogical considerations would induce the belief that great interest is likely to attach to such an inquiry; and Dr. C. R. Hall, in recently paying attention to this point, observes :—"Beneath the soft pyogenic lining of a large cavity I have, in two instances, found bloodvessels in a state of fatty degeneration. In another instance I found fatty bloodvessels in a portion of distensible lung half an inch distant from any deposit of tubercle, the epithelium of the air-vesicles being here fattily dege-

No.	Sex.	Age.	Arc.	HISTORY.	STATE OF HEART.
1	Male..	30	Above and below	Has phthisis pulmonalis. Rheumatic pains during the past three months.	A slight clack with the first sound. Impulse normal.
2	Male..	30	Slight above	Phthisis. Died May 18th.....	Signs of enlargement, with dilatation. Post-mortem: Large, soft, flabby, with some fatty degeneration.
3	Male..	31	Very marked above and below	Rheumatic for twelve years. Incipient phthisis. Tongue flabby, and indented by teeth. Died suddenly of acute pleurisy, with effusion. Liver small, with patches of fatty degeneration.	Post-mortem: Large; large amount of fat anteriorly, less posteriorly; decided fatty degeneration.
4	Female	32	Slight above	Was treated for anæmia, with blowing sound, a year ago, successfully. Now prostrate and anæmic to the last degree. Dyapnoea. Died April 15th, in a fit of syncope. Incipient phthisis. Post-mortem: Kidney fatty and cystic; large fibrous tumour of uterus; an unusual amount of normal fat; liver fatty degeneration throughout.	A peculiar clack heard with first sound over aortic valves. Post-mortem: Slightly hypertrophied; no valvular disease; pale, very flabby, utterly drained of blood; and considerable fatty deposit on anterior wall, fatty degeneration.
16	Female	48	Slight above	Entered two months since with debility, which has gradually increased, resulting in a decay of the vital powers, and a lingering death without apparent cause. Treated as incipient phthisis. Post-mortem: Liver slightly fatty; kidneys ditto; a large fibrous tumour of the uterus; tubercles in lungs and lymphatics in earliest stage.	Sounds indicate disease of aortic valves. Post-mortem: Small and slightly fatty; calcareous deposit above aortic valves and base of mitral valves.
17	Female	49	Above...	Rapid phthisis. Died Dec. 4th. Post-mortem: Liver large, light-coloured, fatty; kidneys softened; fibrous tumour of the uterus.	Post-mortem: Soft, flabby, and somewhat fatty; pale.
34	Male..	53	Circle dim.	Phthisis. Ascites a year since. Died June 22nd, 1856.	Roughness of second sounds. Post-mortem: Large, pale, flabby, somewhat fatty.

* "The matter which is expressed from a softened atheromatous patch consists almost entirely of variously-sized oil-drops, quite fluid, and capable of coalescing, and of cholesteroline tablets. The calcareous change is quite as common in atheromatous matter as that of softening. The two often proceed simultaneously; one part of a patch, indeed, may be seen calcifying while another is breaking down by softening."—Dr. H. Jones: Brit. and For. Med.-Chir. Review, vol. xi., 1838, p. 840. Vide also G. Gulliver, Med.-Chir. Trans., vol. xxvi., 1843, p. 87.

"Organic alterations of the sorts—namely, the soft yellow patch and the white cartilaginous patch, with the ulcerations they so frequently entail, and, lastly, the osseous patch, were noticed (in phthisis) with somewhat less frequency than red discoloration—namely, in the sixth part only of my cases, either simple or complicated, in persons varying in age from thirty-five to seventy-five years. Generally speaking, these changes of texture were in a more advanced state, and more frequently met with, near the bifurcation of the sorts than elsewhere."—Louis: Researches on Phthisis, Syd. Soc. Trans., p. 53.

† "The elementary constituents of the liver, under unfavourable nutritive conditions—as, for instance, in chronic tuberculosis—are very frequently subject to different modes of involution, of which we shall first consider those which occur in the fatty liver. In this case an accumulation of sometimes rather minute fat globules is observed to take place in the hepatic cells. These globules appear to lie, as it were, upon the flattened cells, although their movements manifestly correspond to those of the latter when water is dropped upon them. The fat-globules frequently attain to such dimensions as nearly or entirely to fill the hepatic cell, whose existence is indicated only by the small projecting angles. In the most advanced stage of this form of degeneration the cells apparently burst. The fat-globules appear to be dispersed, universally, in the dirty-yellow hepatic substance."—Dr. C. Wedl: Rudim. of Pathol. Histology, p. 163.

M. Louis found fatty degeneration of the liver in one-third of his cases, and exactly the same proportion is recorded by M. Andral as the result of his experience.

‡ "In addition to the evidence that the strumous diathesis power-

uerate. This makes four cases in which I have now seen fatty degeneration of the small blood-vessels of the lung in phthisis: near to, but not mixed up with, tubercle in one; within grey tubercle on the inclosed wall of an air-vesicle in one; in the wall of a large cavity in two.*

In an admirable paper read before the New York Medico-Chirurgical Society, by Dr. B. Lee, "On the Symptomatic Value of the Arcus Senilis, with a tabulated statement of 72 Cases,"† (see page 197) I find the following instances recorded:—

Dr. B. Lee (*loc. cit.*) observes:—"While inquiring the histories of the cases recorded (72) my attention was early attracted, as I think any one's must be who glances at the table, by the very frequent existence, in those in whom the arcus was found, of irregular, ill-defined muscular pains, such as would be generally put down as chronic rheumatism, yet with some doubt as to whether they are not, in some degree at least, neuralgic. Every physician must have met with such cases, the pains annoying, difficult of relief, seated generally in the bellies of the muscles, causing more or less stiffness, sometimes tenderness, scarce ever accompanying or consequent on, not often in the subjects of, acute, articular rheumatism. Such pains pass under the common title of rheumatic, and as such I have entered them in the table; but their occurrence, in so many instances, in conjunction with the fatty arc, and often in a degree of severity proportioned to its extent, has led me to propose the inquiry, whether these vague pains may not be the result of fatty degeneration of the muscles? That this disease may give rise to pain is, I think, a rational idea in itself, and Prof. Rokitansky gives it his support as follows:—Speaking of that "form of degeneration" which "is characterized by the development of minute particles of free fat between the primitive muscular fibres," he says, "I once met with this disease in the muscles of the calf, in which it had given rise to considerable pain. This fact coincides with the experience of other observers."

I can conceive of no reason why pain should not likewise be produced by that form in which "adipose tissue or fat cysts are formed between

the ultimate muscular fibres." In connexion with this subject, I may call attention to an article by M. Beau in the *Presse Médicale Belge*, Jan. 3rd 1856, translated for the *American Medical Monthly* for March of the same year, on the "Arthralgia of Phthisical Patients." "Under this term the author comprehends settled pain in the limbs of phthisical patients." "These pains," he says, "show a decided preference for the lower limbs." "They are rarely confined to the lower extremity," or "to the thigh, leg or foot, almost invariably occupying both lower limbs to their entire extent." "It is very difficult to localize these pains; they affect the lower limbs in mass, without our being able to fix their seat in the nerves, the muscles, or the osseous tissue."

The presence of these pains in many cases of phthisis must have attracted almost universal attention, and the description here given of them is just such as would best describe those of which I am speaking, save that the confinement to the lower limbs is by no means so invariable as the author insists, though often seen. Now, what are some of the facts with regard to fatty degeneration of the muscular tissue bearing on this point? 1st. "The muscles most exposed to it are the voluntary muscles, especially of the lower limb"—*Rokitansky*. "It is met with in the ~~sarcoma~~ of the heart, and in the fleshy coat of the bladder, but is most common in the muscles of the lower extremities."—*Ibid.* "This fatty metamorphosis does not only occur in the above mentioned transition stage, &c., but likewise independently of any such connexion, and accompanied with general emaciation, as the result of tuberculosis and tuberculous phthisis."—*Ibid.* "The fatty transformation of the liver is almost confined to phthisis pulmonalis."—*Dunghison*. "Anomalous pains are apt to occur both in this and the next stage of phthisis, in different parts of the body, which add greatly to the distress."—*Ibid.*

Montague-street, Russell-square, June, 1857.

(To be continued.)

ON A CASE OF POPLITEAL ANEURISM, IN WHICH THE TREATMENT BY COMPRESSION FAILED.

By W. SHORTLIFF, M.D., M.R.O.S., Malaga.

J. D.—, aged thirty-eight, a healthy countryman. About two years ago, whilst walking a haste down a steep and badly paved street, he gave his leg a twist, and immediately felt great pain in the knee, but not particularly in the ham. This confined him to the house for some time, the pain gradually getting better; but the limb remained more or less weak and painful, and some months after he observed a lump as big as a walnut in the ham, but did not remark if it pulsated. This swelling went on increasing in size, and gradually lamed him, so that for nearly a year he has not been able to work. Leeches, poultices, ointments, plasters, and such-like, have been used by the *savans* of his village, professional and otherwise, but of course without effect. At pre-

fully predisposes to the development of the granular disease of the kidneys, founded on the much greater frequency of tuberculous disorganization of the lungs, than of any other single form of visceral affection in the bodies of those who exhibit decided renal disease, whether primary or secondary, still further proof of its influence is afforded by other affections with which the renal disease is often combined. Thus, I find of the cases where the lungs were free from tubercle, one patient laboured under strumous ulcers; a second under chronic peritonitis, and the peritoneum was studded with small granular tuberculoïd masses of lymph; in a third there existed circumscribed peritoneal and pleuritic abscesses, bounded by fibro-cartilaginous false membranes, and containing sero-purulent fluid mixed with caseous matter; in a fourth case, the sternum and ribs were carious, and had given rise to extensive abscesses; and other instances of the same kind might be quoted. In several cases, also, where the lungs were pneumonic, the appearance of the consolidated portions was different from that of ordinary hepatization. They were unusually firm, exuded very little fluid on compression, were of a pale-buff colour, very distinctly granular when torn, and presented an appearance which might be regarded as intermediate between the pneumonic condensation and tuberculous infiltration."—Dr. T. B. Peacock: Lond. and Edin. Mon. Journal. "On the Co-existence of Granular Disease of the Kidneys with Pulmonary Consumption, &c." vol. v., p. 564, 1845.

* Brit. and For. Med.-Chir. Review, Oct. 1855, p. 482.

† The American Medical Monthly, Sept. 1854, p. 161.

sent (September, 1853), there is an enormous pulsating tumour, as large as a good-sized melon, filling the popliteal space, and extending up the back of the thigh and down to the calf, over seven inches in length. It is firm and tense, but pressure on the artery in the groin stops the pulsation, and makes it flaccid. The anterior tibial artery can scarcely be felt, and the posterior not at all. The leg is half bent, and somewhat œdematous, and cannot be straightened. The temperature not altered.

I determined to treat the case by compression, and two light iron clamps, made for the occasion by an intelligent locksmith, and well padded, were put on, one at the lower part of the upper third of the thigh, and the other about a couple of inches lower down, the part being previously well floured. The clamps answered the purpose of stopping the pulsation perfectly well. The upper one was tightened just enough to stop the pulsation in the tumour, and was borne for three hours; then the lower one was screwed in a similar manner, and the other relaxed. This was borne also for three hours, but the pain was then so great that he was obliged to slacken it, and leave both loose. At night, the upper clamp was tightened as much as he could bear, but not quite enough to stop the pulsation in the tumour. It remained in this state all night, but being determined to bear it, he did not loose the screw, and passed a sleepless night, tortured by pain in the knee and numbness in the leg and foot.

Sept. 8th.—The clamps were tightened alternately to-day for three hours and a half in the morning, and two hours and a half in the evening—all he could bear—slight pressure only being kept up in the intervals, but not enough to stop the pulsation completely. A phlyctena made its appearance.

9th.—The lower clamp was screwed tight for three hours in the morning, and three hours in the evening.

10th.—The tumour seems harder to-day, and the pulsation weaker. The upper clamp was kept tightened for three hours and a half in the morning, and for over four hours in the evening.

11th.—One clamp for four hours, and again in the evening for two hours and a half more, a 7lb. weight being kept upon the artery in the groin during the intervals, with the pad of a tourniquet underneath it.

12th.—Clamps screwed tight four hours in the morning and three at night, with the weight in the intervals.

13th.—Great pain in the knee and leg, and phlyctenæ so numerous that there was no room for the clamp, which was therefore obliged to be desisted from for awhile. Tumour in much the same condition.

28th.—The sores being quite healed, the treatment was resumed. The clamps, repadded, were readjusted to-day, with a 10lb. weight in the groin. All three were alternately made use of, and the pulsation in the aneurism stopped for four hours in

the morning, and rather more in the evening; and this was continued with little variation for four weeks.

Oct. 26th.—The aneurism seems a little harder at the sides, but is still soft in the centre; its size and pulsation unaltered. Much pain in the leg and foot, and in the tumour. He is getting accustomed to the clamps; and as they hurt him less, he keeps one of them tight almost without intermission.

30th.—Clamps kept on day and night without intermission, the 10lb. weight being also used at intervals. He sleeps with one screwed up, and when it hurts him—usually between two and three hours—he wakes, and tightens the other. He has become expert, and understands the principle of the cure, and is determined to do his utmost to make it succeed, and avoid a cutting operation of which he has great dread.

Nov. 7th.—Uninterrupted compression and stoppage of the pulsation of the tumour have been kept up night and day for the last week. No change in the aneurism. In consultation it was determined to persevere in the treatment for one week longer.

14th.—The compression has been very efficiently continued without interruption night and day. He suffers much from pain in the leg, and foot, and knee, and is thoroughly wearied out with the treatment. The aneurism is found undiminished in size, and soft and pulsating as at the commencement of the treatment. The clamps were taken off, the treatment by this method having clearly failed.

20th.—I tied the artery to-day in the usual situation above the sartorius.

After this the case did well, though the decrease in the size of the tumour was exceedingly slow; so that a year after the operation it was still full two-thirds its original size, and soft as at first, and I had some idea of letting out the contents by an incision, as he could not yet do his work, not being able to straighten his knee. It was considered more prudent, however, to desist from this, and trust to time and gentle friction, with iodine ointment, &c.

At the present time, three years since the operation, the tumour is reduced to the size of a small hen's-egg, gives him no inconvenience whatever, and he has been walking without limping, and doing his daily work for a year and half past. But what remains of the tumour is still soft and pulsatious, indicating a want of plasticity in the blood, which was possibly the cause of the failure of the compression-treatment in this individual.

Malaga, 1857.

ON THE IMMEDIATE CAUSE OF SLEEP.

THE human body, as is universally known, requires intervals of rest, for repairing the waste caused by the "wear and tear" of activity. This season is the period of sleep. During this period the functions of the brain and spinal cord are suspended (but not of the sympathetic system),

and hence physiologists have supposed that nervous energy was exhausted. But it would appear more probable, and better supported by facts, to believe that the nerve force is not exhausted, but simply prevented from exercising its effects on the body, as a timepiece may be stopped for repair by touching the pendulum, though the power of the spring is by no means exhausted. It would appear that the cause of sleep does not commence with the nervous system, but in the muscular system, and thence reacts on the brain. Thus:—The bloodvessels, in virtue of their muscular fibres, possess the property of *tonicity*—a property independent of the nervous system. After the exertions of the day, the muscular system becomes relaxed, the bloodvessels lose their tonicity, become dilated, and the blood in them presses upon the nervous centres contained in their unyielding cases—viz., the cranium and spinal canal. That the tonicity of the vessels is less before sleep than immediately after, is shown by the fact that the pulse is less excitable and less frequent in the evening than in the morning.

As evidence in favour of this theory the following facts may be cited:—

1. The difference between the morning and evening pulse.

2. The action of narcotics. Thus sleep may be produced by drugs which we know have the power of dilating the bloodvessels, as opium, &c.

3. Fracture of the cranium, with depression, or effusion into the cranium, cause coma, from pressure.

4. Sleep first manifests itself in the eye. The first feeling of sleep is dropping of the upper eyelid, from cessation of nerve force of the third nerve. Now, this nerve lies along the outer wall of the *cavernous sinus*, and is therefore very favourably situated with regard to pressure.

5. The organic functions do not cease on account of their nerve force being supplied by the sympathetic system, and the sympathetic system not being inclosed in an unyielding case is unable to have any pressure applied to it.

6. Before sleep there is a feeling of fulness in the head.

7. The bloodvessels in the brain of an animal killed during sleep are found to contain more blood than those of one killed when awake.

8. Astringents, by their effect in contracting the bloodvessels, prevent sleep. A familiar illustration of this is the effect of green tea.

9. Warmth, by its relaxing effects, favours or produces sleep.

10. Excessive cold, by a destruction of this tonicity, causes sleep. The post-mortem appearances of the brain of a person who died during sleep produced by cold were those of congestion and even effusion.

11. Whatever mechanically determines the blood to the head has the same effect as whirling round for a length of time, or ascending a mountain.

12. In disease stertorous breathing is a symptom

of determination of blood to the head. *Stertor* or snoring is a frequent accompaniment to sleep.

E. H.

REPORT OF CASES OF POISONING BY WHITE PRECIPITATE, AND WHITE HELLEBORE.

BY J. GILES, ESQ., M.R.C.S.L.

ALL cases of poisoning are of interest at a time when the sale of poisons is attracting general attention. Of the effects of white precipitate, as a poison, little is recorded, Dr. Taylor mentioning only two cases; one of recovery, the symptoms having been those of gastric irritation alone; the other, of death from salivation, in a child aged seven. In neither case is the quantity taken mentioned.

P. T—, a young woman, brought home, on May 22nd, 1857, a powder obtained from a druggist, and took it mixed in a cup of tea, at about half-past five p. m. She immediately became very sick, and continued so, suffering also much pain at the stomach. Her mother being alarmed as to the character of the powder, brought the cup from which she had taken it at about ten p. m. The cup was coated with an incrustation which, on analysis, proved to be ammonio-chloride of mercury. On visiting her, she was suffering much pain, and had been purged frequently. An emetic of sulphate of zinc was administered; and milk was directed to be given, there being nothing better at hand. The gastrointestinal irritation had abated by the next day; but great swelling of the face and gums came on with salivation, which lasted several days. She was convalescent by the beginning of June. She stated that she had asked for "precipitate." The paper was marked "white precipitate, 1d." She would not state with what object she had bought the powder; but there is some reason for thinking that it was with the idea of curing the venereal disease. On buying the same quantity at the same shop, and comparing it as well as was possible with the quantity left in the tea-cup, it appeared that she could not have taken much less than half a drachm. Pereira states that white precipitate is largely adulterated with sulphate of lime; but this sample appeared to be almost pure, being nearly altogether dissipated when heated on platinum foil.

A case of poisoning by white hellebore has recently occurred under the care of my brother, Mr. F. Giles:—A man, feeling unwell, and purposing to take some cream-of-tartar, swallowed by mistake about half an ounce of white hellebore in powder. The paper which contained the powder was marked "Poison." Feeling sick and in pain, he sent for assistance about twelve at noon, four hours after taking the poison. Emetics and enemata were given, and he speedily recovered. The symptoms were purging pain at the stomach, burning sensation of the mouth and throat, but no vomiting until after an emetic. There was no giddiness, or other cerebral symptom.

June, 1857.

ON THE ADULTERATION OF BREAD AS A CAUSE OF RICKETS.

By JOHN SNOW, M.D.

ON commencing, in the year 1839, to see a considerable amount of practice amongst the poor of London, chiefly the out-patients of a public hospital, I was very much struck with the great number of cases of rickets. The complaint was shown more particularly in the bones of the leg, causing an outward curvature of the tibia and fibula; in children in their second and third year, it seemed almost the rule, and might be observed in the streets and the parks, as well as amongst children brought for advice. The complaint, moreover, was not by any means confined to the poor, but affected the children of the middle classes to a considerable extent.

The usual causes to which rickets are attributed are of a somewhat general nature, such as vitiated air, want of exercise and nourishing food, and a scrofulous taint. These explanations, however, did not satisfy me, as I had previously seen a good deal of practice in some of the towns in the north of England, where the over-crowding and the other evils above mentioned were as great as in London, whilst the distortion of the legs in young children was hardly present; moreover, I noticed that the most healthy-looking and best-nourished children often suffered most from curvature of the bones of the legs, owing to their greater weight; and I afterwards found that this complaint was quite common in the villages around London as well as in the metropolis itself.

The bones owe their hardness to phosphate of lime, which exists ready formed in many articles of food, and only requires to be assimilated, whilst in rickets the phosphate of lime in the bones is known to be deficient: and therefore it seemed extremely probable that the want of this earthy salt in the food of the infants of this metropolis was the chief cause of the soft state of the bones. My attention was naturally directed to milk, which contains one chief supply of phosphate of lime, and which is somewhat scarce and dear, and not of the best quality in London; but I immediately recollected that in some of the mining and manufacturing districts in the northern counties of England milk was scarcely used at all in the families of the operatives, and yet I had hardly seen a case of curvature of the legs from rickets. On reflecting on the subject of bread, however, there seemed to be something which might explain the prevalence of this complaint in London. In the northern counties, where coals are cheap, it was the universal custom for every family to bake their own bread, and I believe still remains so; whilst in the south of England it is as much the custom to buy bread from the baker. Now, the bakers, so far as I have examined, all put alum in their bread, whilst this is never done in domestic practice, and the flour dealers rarely adulterate the flour with this substance. They are liable to a heavy penalty for adulterating flour, but the law is never enforced against the bakers. I have never examined a specimen of flour which con-

tained alum, or a specimen of baker's bread which did not contain it.

When my attention was first turned to the subject of rickets, I thought it likely that the sulphuric acid of the alum would decompose the phosphate of lime of the wheat, and form sulphate of lime, which would not be available as nourishment for the bones; and I formed an intention to investigate the question both chemically and statistically; but this intention was long postponed, on account of other engagements and inquiries. In the meantime, and without any regard to the question of rickets, Liebig has inquired into the action of alum in bread, and his investigation will justly have more weight with the reader than any inquiry of mine. He says, "Since phosphoric acid forms with alumina a compound hardly decomposable by alkalies or acids, this may perhaps explain the indigestibility of the London bakers' bread, which strikes all foreigners."*

It is evident from the above passage that Liebig has ascertained that alum decomposes the phosphate of lime of wheat, and it is not likely that the bones would be able to nourish themselves with this salt out of phosphate of alumina and sulphate of lime; and where baker's bread forms the chief and almost the only article of food, as it does amongst the children of the working classes in London and many other towns, one might expect the bones to be ill-nourished, as regards their earthy and hardening material. This appears to be the actual fact, as far as I have been able to extend my inquiries. The subject is capable of being decided by an exact numerical investigation, but I have thought it better to publish my inquiry in its present imperfect state, than to wait till I should be able to make such a complete research as I could wish, more especially as, by directing the attention of the profession to the question, it may be earlier decided. I expected to be able to contrast some of the large institutions containing young children in this metropolis with each other; but, so far as I have inquired, they are all supplied alike with bakers' bread containing alum. So far as I have been able to learn, rickets are not common at present in the towns in the north and west, where home-made bread is chiefly used; and I was lately told, that in one town in Cornwall, where the people make their own bread, this complaint is almost absent; whilst in a town a few miles off, where bakers' bread is consumed, the complaint is extremely common; but as my inquiries have been only of a colloquial nature, I hesitate to mention places and persons. If it could be obtained, perhaps a return of the number of cases of rickets in the children under four years, as compared with the whole number, which are brought to the dispensaries, in towns where respectively the people buy chiefly flour or ready-made bread, would best help to decide the question.

* *Letter on Chemistry*, third edition, p. 448.

It does not follow, if my conclusions are correct, that every child eating bread adulterated with alum ought to have rickets, or that every child fed with good bread ought to be free from the complaint; for, on the one hand, the other articles of food may often supply sufficient phosphate of lime without that of the bread, and, on the other hand, derangement of the digestive and urinary functions may prevent the phosphate of lime being assimilated when present. What we might expect, however, would be precisely what we observe—that rickets would be much more common in the children of the working classes fed almost entirely on bread than in those who have a greater variety of food. It can also be explained how the bones ultimately become hard from the gradual accumulation of the scanty supply of phosphate of lime derived from milk, potatoes, and other articles of food, whilst that which ought to be supplied in the bread is still withheld.

If the deformity in the bones of the legs does not proceed too far, it has a great tendency to diminish, and even disappear, as the children grow up; and the artificial support which is afforded by iron instruments and splints, both in the various hospitals for deformities, and under the advice of private medical men in London, diminishes very much the amount of permanent deformity which would otherwise be met with.

In my examinations of bakers' bread I have been much struck with the apparent universality of the practice of using alum, and with the large quantity employed—a quantity between twenty and thirty times as great as that usually stated by authors. I have met with alum, not only in the ordinary bread sold by bakers, but also in captains' biscuits, and in the so-called farm-house bread; and I was somewhat surprised to find that the high-priced bread, sold in the fashionable neighbourhood to the west of Regent-street, contained more alum than the cheap bread sold in many of the poorer districts. I found that the bread supplied to me last autumn contained 10·13 grains of alum in 500 grains—i. e., 561 grains, or more than an ounce and a quarter in the 4lb. loaf; whilst some bread obtained from a very noted baker contained 11·37 grains in the 500 grains, or nearly an ounce and a half in the 4lb. loaf. The following is a brief account of the analysis of the latter bread:—500 grains, being carefully dried at the temperature of 100 Fahr., lost 128 grains of water, or more than one-fourth. Being carefully incinerated in a crucible, the ashes weighed 5·85 grains. The ashes yielded alumina, which being washed, dried, and ignited, weighed 1·2 grain, representing 11·37 grains of crystallized alum; with chloride of barium, they yielded 1·4 grains of sulphate of baryta, and with the nitrate of silver, 6·7 grains of chloride of that metal, representing 2·8 grains of common salt.

Dr. Hassall and some other authors have very properly pointed out that the only safe way to seek for alum is to incinerate the bread, and examine the ashes; but many writers go on

repeating the statement that alum may be found by digesting the bread in distilled water, filtering, and applying tests to the water. In this way seldom more than a trace of alumina can be detected, even when the bread contains a large quantity; but it is probable that many persons take this short and easy method of examining it, and it is probably in a great measure owing to this circumstance that the bakers continue to use alum with so much impunity. An instance came under my notice not many months ago where a baker expected, with the utmost confidence, to have a satisfactory certificate to lay before the committee of a club-house respecting his bread, although it contained a great quantity of alum.

A probable way to break through what seems the universal practice of bakers to adulterate bread, would be for the committees of the public hospitals and the guardians of the poor to oblige the bakers who contract to supply their respective institutions to furnish an unadulterated article. No one pretends that alum is either nutritious or wholesome; and if the loaves without alum should cost a little more, owing to their carrying less water, no one can doubt that as much nutriment would be obtained for a given sum as under the present system.

Sackville street, June 1867.

CASE OF DISLOCATION OF THE KNEE-JOINT Laterally (Internally), WITH FRACTURE OF THE UPPER FOURTH OF THE FIBULA.

By SYLVESTER GRIMES, Esq.,

ASSISTANT HOUSE-SURGEON, LIVERPOOL NORTH DISPENSARY.

On the 23d of December, 1856, John Q—, a labourer, was brought to me, and reported to have fallen when coming up some cellar steps with a pail of water on his head; when about half-way, he slipped, and the whole weight of the body and pail came on the leg of the right side. He immediately felt severe pain, and found he could not get up, and wishing for surgical assistance, upon his request he was brought to the dispensary. Having been placed in a seat, I discovered very great deformity, his leg being almost at a right angle. On questioning him if he had any deformity of the limb previous to the accident, he replied "No," and had been a very healthy man from boyhood, and could walk upright.

Having examined him, I found dislocation of the knee-joint laterally (internally), with fracture of the upper fourth of the fibula. I then commenced to put the limb in its natural position, first, by extending the leg, then bending the knee over my left thigh, to reduce the dislocation, which was very easily accomplished; it was again extended, and the fracture rightly adjusted; padded splints were applied on each side of the joint, and one underneath; then bandaged from the toes upwards to the thigh. I ordered him to be conveyed home, and placed in a recumbent posture. On seeing him early next morning, he complained of slight pain in the knee. I elevated the leg above the level of the knee, resting upon

pillows, with strict caution not to move until I gave the next visit.

Dec. 27th.—Feverish, and complained of much pain in the knee. The bandages were slackened, which gave him great relief. Bowels constipated. To take an ounce and a half of castor oil.

Jan. 2nd, 1857.—Great swelling and pain in the knee, with constitutional disturbance. Ordered a pill, consisting of a grain and a half of calomel and half a grain of opium powder, to be taken every six hours.

7th.—Pain less severe, and swelling much reduced. Ordered a saline purge, and re-applied the bandages.

15th.—Total absence of pain and swelling. Re-applied splints and bandages.

Feb. 2nd.—Still going on favourably, and feels the joint almost as strong as the knee of opposite side; he wished to get up, and walks about the room with crutches. I recommended him not to leave his bed for ten days.

12th.—Took off bandages and splints, and enveloped the whole limb with starched bandages. The following morning he got up and walked about the room with a crutch and stick, experiencing no pain when he put his foot to bear pressure on the floor.

17th.—Can walk without his crutch, merely with a walking-stick, and feels his leg to be quite strong.

21st.—Commenced visiting me at the dispensary (a quarter of a mile from his home), with very little fatigue.

March 10th.—Visited me for the last time, and took off the bandages. He left the dispensary to commence his usual employment the following morning—Cured.

Liverpool, 1857.

SWALLOWING A NEEDLE AND THREAD.

By ARTHUR D. WHITE, M.D., M.R.C.S., &c.

At four P.M. on December 24th, G. M—, a child, twenty-two months old, swallowed a needle an inch and a half long, through the eye of which was hanging a piece of thread five inches long. Observing the child in trouble about its throat, I ran to it, opened its mouth, and saw the needle and thread in the fauces; but before I could seize hold of it, it had disappeared. No subsequent inconvenience was experienced by the child, who took his food as usual; and at seven A.M. of the second day, the needle and thread passed per anum with the feces without the slightest difficulty, having occupied thirty-nine hours in its transit through the alimentary canal.

Brig *Tyrratty Mier*, Bay of Bengal, Dec. 1856.

ON UNNECESSARY ORTHOPÆDIC OPERATIONS.

By W. J. LITTLE, M.D.,

FOUNDER OF THE ROYAL ORTHOPÆDIC HOSPITAL, &c.

A LONG time ago, I engaged to submit to the readers of *THE LANCET* some observations on the

above subject. It will for a moment only excite surprise that one who has been recognised as the earnest introducer of the operation of Stromeyer—subcutaneous tenotomy—should interpose objections to its too general application. The more startling and convincing were the beneficial effects of division of tendons, the greater was the probability that, like other useful proceedings, this operation would be abused. This result was fully illustrated within ten years of Stromeyer's discovery (1831), in the multitudinous sections of tendons, fifty in number, performed at one time, on a single patient, affected with universal spasmodic contracture, and by the wholesale tenotomy advocated during a considerable period, for "cure" of spinal curvature. In the present day we have not to lament this enormous injustice to the reputation of a great discovery, or to deplore the seeking after reputation by displays of severing tendons by the score at one sitting, but mainly to regret that the operation necessary in many cases of a given class of distortions—talipes varus, for example—is by some surgeons indiscriminately applied to every deformity of the class. The object of these papers is to point out that instances exist in which certain distortions, more or less similar in external configuration, require at one time surgical operation, at another, relief by physiological, mechanical, or manipulative treatment; to attempt to show the characters by which these instances may be recognised, and to describe the particular measures available in preference to tenotomy.

In the outset, I acknowledge having probably, eighteen years ago, by teaching and example, fostered too frequent resort to the tenotome; for, having witnessed the comparative superiority of operative or mechanical treatment, especially as during the early period of introduction of tenotomy, a large proportion of adults, who had fruitlessly tried treatment by "irons," were the subjects of the new operation, it was natural that the merits of instrumental treatment of deformities should be unduly slighted, or rather, it was in the nature of things that the capabilities of an improved system of mechanical, manipulative, and physiological treatment of distortions should not be anticipated. It is, however, due to myself to state, that, even in 1839 ("Treatise on Club-foot and Analogous Distortions"), I recommended trial of mechanical treatment in infantile talipes varus. A few years' further experience of tenotomy and of instrumental treatment without tenotomy sufficed to show their respective value, and in 1843, in the first course of lectures delivered at the Royal Orthopædic Hospital (see *THE LANCET* 1843-44), I discountenanced hasty resort to tenotomy, and recommended that, in many cases, the medical practitioner should avail himself of it only after trial of suitable instrumental means. Despite these warnings, I have witnessed many instances of deformity which had been operated on, notwithstanding that previously they were as speedily and with more ultimate benefit to the patient, relievable without operation. Many

temptations to resort unnecessarily to the knife still exist. I trust therefore the following papers will not be void of interest and utility to some of your readers. An especial aim shall be to render these observations practically useful, and for this purpose I propose to take for their basis a series of easily-recognisable forms of distortion.

Infantile Congenital Talipes Varus, or Ordinary Club foot.

The usual treatment of varus, or common club-foot, consists in section of three tendons, those of the gastrocnemii and of the anterior and posterior tibial muscles, succeeded by mechanical treatment, proportioned in amount and duration to the severity of the case. If the surgeon has not the necessary confidence in his operative skill, he severs the Achilles anterior tibial tendons only, or perhaps he extends his operative interference to the plantar fascia. Now I desire to show that operation in every case of congenital club-foot is neither necessary nor desirable. Possibly many surgeons treat varus without operation, and the attempt to demonstrate the inexpediency of operating in every case may appear a work of supererogation. I know, however, that in London the rule is that of indiscriminate operation. Two of the ablest and most recent writers on the treatment of congenital varus, Mr. W. Adams and Mr. Brodhurst, whilst admitting the possibility of success without operation in very slight cases, strongly discourage the practice.

The objection to instrumental treatment, as opposed to surgical operation added to instrumental treatment, is the greater length of time said to be required to effect a cure. The answer to the objection is, that in those cases in which tenotomy is not required, the instrumental and manipulative treatment does not involve longer duration of treatment.

It is true, that with the aid of tenotomy, the deformity is more quickly removed, but whether or no operation be performed, professional treatment is equally indispensable in either case, until the child has acquired the art of correctly walking. The removal of the deformity is strictly speaking only the preliminary to restoration of the functions of the muscles and articulations; in short, the preliminary to the obtainment of a useful member. The habit of over-rating the necessity of tenotomy depreciates the value of instrumental, manipulatory, and physiological treatment. These at least are indispensable in every case.

The objections to unnecessary tenotomy are, that during a period that may vary from three to four weeks—i. e., during reunion of the tendons, it is proper to keep the ankle-joint at rest by means of suitable splints or apparatus, no manipulatory movements or passive exercises being permissible (if any, very slight ones only); that as a consequence of this immobility of foot in a greater or less bent position, especially in the rapidly growing infant, more or less limitation of ankle movement, or stiffness of ankle-joint, with

corresponding weakening and wasting of muscles takes place; and lastly, that as a consequence of the division of the tendon, say the Achilles, and the subsequent facile bending of the foot, the belly of the muscle retracts, so that commonly the fleshy part after "cure" bears a smaller proportion than natural to the tendinous part, the calf being restricted to a higher part of the leg than natural. This excessive length of tendon may often be obviated by extreme caution and slowness in conduct of after-treatment, and by the tendency to re-contraction which the tendon often manifests two or three months, and longer, after operation. But these obviating circumstances destroy the peculiar value of tenotomy.

I am perfectly satisfied from many experimental trials, that where the contraction is slight and curable without operation, a higher development of the muscles of the calf, and consequently a more symmetrical limb may be obtained by cure without tenotomy than with its assistance. On the other hand, in severer cases, all the conditions—anatomical, pathological and therapeutic—being different, the contrary obtains. In such cases, a more perfect limb results from the more speedy and effectual relief afforded by the operation.

I have elsewhere mentioned, that if we arrange all cases of congenital varus into three groups, according to the degree of deformity, it will be found that the whole of the third group, which is not the most numerous, and the majority of the second, the most numerous group, absolutely require operation, if we would cure the distortion within any reasonable period; whilst the majority of the first grade, and some of the second, may be cured without operation if the same pains be bestowed upon mechanical treatment and manipulations when the operation has not been resorted to, as are required when the operation has been performed. I again admit that the deformity of the ankle and tarsal joints may be more quickly removed in every case with the aid of operation than without it, but I repeat that the removal of deformity is not the only object in view, notwithstanding the rapidity with which this result is often obtainable exercises a brilliant effect upon the bystanders, and creates one of the temptations to unnecessary tenotomy. It will be found, after patient observation and experience of the results of both methods, all things being equal, that of cases curable without operation, those which have been cured without operation present a nearer approach to the anatomico-physiological standard; that in the slighter forms, those in which a rapid and sometimes instantaneous removal of deformity has been effected by operation, the state of the divided muscles and tendons is less satisfactory than when no operation has taken place, the divided tendons (as readily perceived in the calf) often remaining disproportionately long, the muscular belly less developed, and a consequent disposition to excessive walking on the heel (talipes calcaneus) being induced.

My inquiry and practice were more persever-

ingly led into the direction of mechanical and manipulative treatment of milder cases of infantile congenital varus, by my having been startled by the examination of a well-marked double varus which had been completely cured, with fewer vestiges of the treatment employed than I had been accustomed to witness after resort to operative measures.

The pith of this paper is contained in the following advice: When the movement at the ankle is very limited, when the foot can neither be abducted by steady pressure, applied by the hand of the surgeon for a quarter of a minute, nor bent upwards even to a right angle *whilst abduction is maintained*; when, in addition to that amount of contraction, one or more ineffaceable depressed lines on the integuments immediately above the os calcis exist; when the os calcis itself is very imperfectly developed, and seems as if tied to the back of the tibia and fibula by deep ligaments; when a deep constant cleft or cutaneous depression between the great toe and heel, or the inner margin of the foot, which constitutes a characteristic mark of varus, exists, caused by shortening of the plantar tissues generally, the case will not be cured without operation.

When, on the contrary, the foot can be drawn outwardly, and abducted by the hand of the surgeon, and be bent at least to a right angle whilst so abducted, by the use of gentle violence, even if some shrinking and crying be excited, a cure may be effected without tenotomy in a few weeks or months, or before the usual age at which sound children attempt to walk.

The manner in which this desirable end can be best attained will be shown in a future communication.

Brook-street, Grosvenor-square.

ON ANEURISM OF THE ARCH OF THE AORTA.

By J. C. BARRY, Esq., M.R.C.S., L.S.A., Clifton.

PRIVATE G. B—, belonging to a detachment of H.M. 74th Highlanders, embarked on board the ship *Whirlwind*, at Cannanore, East Indies, for England, came under my care, on the 20th of February, 1857, having been under previous treatment at the military hospital, Jackatalla. His case was stated to be thoracic aneurism. Upon examination, I found the following symptoms:—Heart's action loud and irregular, more distinct on the right than the left side, especially upon listening with the stethoscope, the same being more evident over the right side, accompanied with bellows murmur. The sternal extremities of the third and fourth ribs of the right side protrude beyond the level of the chest. He has pain over the right nipple; numbness down the right arm; dyspnoea on exertion; slight cough; palpitation; no dysphagia; always violent throbbing on the right side of the chest, especially on exertion; pulse irregular and labouring; tongue brown on the dorsum, red at the tip and edges. Ordered,

dilute prussic acid, three minims; water, an ounce: to be taken twice a day.

Feb. 21st.—No better; bowels costive. Extract of colocynth, six grains; blue-pill and Dover's powder, of each one grain, in two pills, to be taken immediately.

22nd.—Not at all relieved. To take, tincture of digitalis, ten minims; water, an ounce, twice a day.

23rd.—Is better; has less pain and throbbing over the region of the tumour.

24th.—Complains of a good deal of cough. Ordered five grains of compound ipecacuanha powder at bedtime.

25th.—Cough better; other symptoms remain the same. Repeat draught, with fifteen minims of tincture of digitalis.

26th.—Better in health; symptoms the same; tongue slightly brown; pulse soft and compressible; strong pulsation on the right side of the chest, with bellows murmur most distinct in the infra-clavicular region; cough a little troublesome.

27th.—Feels better. To continue the draught.

28th.—Has pain over the situation of the tumour, with a good deal of pulsation. A mustard poultice to be applied over the region of the tumour.

March 1st.—The pain has decreased since the application of the poultice.

2nd.—Not so well, tumour increased in size, and he still has pain. Repeat the draught.

3rd.—Just the same; bowels costive. Ordered, calomel, five grains; extract of colocynth, ten grains, to be taken directly. Two ounces of wine.

4th.—More pain, throbbing, and bulging out of the tumour; bellows murmur very evident in the infra-clavicular region. To take, dilute prussic acid, four minims; water, an ounce, twice a day. One pint of soup, and two ounces of wine. I called to see him at five minutes to four o'clock in the afternoon, and found him in a state of syncope; lips and face pallid; surface of the body covered with a cold, clammy perspiration; no pulse at the wrist; and upon listening over the region of the heart, I found it had ceased to pulsate. I kept him in the recumbent position, applied cold water to the head, and ammonia to the nose. At four o'clock he expired. For the last day or two, the bulging out of the tumour had increased, with more pain and throbbing, and he had felt faint at times.

Post-mortem examination, at half-past five o'clock A.M., thirteen hours and a half after death.—Before opening the chest, I particularly observed that there was no bulging out of the ribs on the right side as was observed to be the case before death. Upon exposing the chest, I carefully explored and found a large aneurism of the arch of the aorta, which had ruptured and discharged itself into the cavity of the chest; it was of great size, and would hold, I should think, fully a quart of blood. The coats were much thickened, so that Nature had, as usual in such cases, endeavoured to repair and thicken them, so

as to delay as long as possible the fatal issue. I removed a quantity of coagulated arterial blood. There was hypertrophy of the left ventricle of the heart, which was otherwise healthy. The lungs were healthy. He was not at all emaciated; on the contrary, of a stout, full habit of body.

Northumberland-place, Westbourne-grove, 1867.

TREATMENT OF ENLARGED BURSÆ BY CAUSTICS.

By JAS. B. PROWSE, Esq., M.R.C.S., Clifton.

I HAVE been in the habit of removing enlarged bursæ by means of the lunar caustic, applied in the form of the stick moistened with a little water and rubbed over the whole surface of the enlargement for the space of some minutes. In most cases this treatment will be found effectual where blisters, the tincture of iodine, &c., have been but of little use, and it will often obviate the necessity of passing setons through the tumour or of removing it by means of dissection. Having in a great number of cases proved the efficacy of this plan, I can confidently recommend it for adoption in practice.

July, 1867.

REPORT OF A CASE OF INFLAMMATION OF THE KIDNEY, PROCEEDING TO SUPPURATION, AND DISCHARGING EXTERNALLY.

By MAURICE G. EVANS, Esq., M.R.C.S., L.S.A., Narberth.

THE above occurred in a thin, impoverished, agricultural labourer, not too well fed, who was attacked with inflammation of the right kidney after a severe wetting, and afterwards remaining in his damp clothes. When I was first summoned to attend him, June 8, I found he had been confined to his bed for six days, suffered from well-marked symptoms of the above disease, and in a very prostrate state. I prescribed the usual treatment, with the exception of bloodletting, which I considered inadvisable at this late stage, and on account of his already debilitated condition. On my third visit, five days from the first, on examining the region of the kidney, I found a hard swelling, about the size of a goose-egg, tense, and extremely sensitive to the touch. I ordered it to be covered with a large linseed-meal poultice, and to be well fomented night and morning. Two days after, I found my patient much the same, but the swelling much more diffused, soft, and fluctuating, now extending up by the side of the spine as high as the angle of the fifth rib. I determined at once to evacuate it of its contents, and with a curved bistoury I made a free incision into it. About twenty ounces of fetid ammoniacal pus escaped. The poultices were re-applied and the patient ordered wine, bark, and a good nourishing diet.

On visiting him a few days subsequently, I found he had much improved; the swelling had quite disappeared; still a small quantity of serum, possessing quite an urinous odour, exuded, and now for the first time pus appeared in the urine itself. He continued to progress most favourably; there is

scarcely any tenderness over the part, the wound has perfectly healed, and he is able to walk about for an hour or two daily, the urine still presenting slight traces of pus.

The above case is remarkable from the absence of pus in the urine until its termination, which has led me to the conclusion that suppuration first took place in the capsule of the kidney, or the tissue surrounding that organ, and that during the process of suppuration it extended into the substance of the kidney itself. It is also peculiar for its rare occurrence, discharging as it did externally, first having entered the sheath of the dorsal muscles, and extending up along the spine and angles of the ribs.

Pembroke, July, 1867.

ON A CASE OF EXCISION OF THE HEAD OF THE FEMUR.

By R. COCKER N. DAVIS, Esq., M.R.C.S., Rye.

EDWARD G—, aged twelve years, was admitted into the Rye Union-house three years ago with diseased hip, the head of the femur being dislocated on the dorsum ilii at the time of admission. His health has been greatly suffering since that time, owing to the discharge from several fistulous openings, there being at present three low and one over the great trochanter, two situated at the upper and inner part of the hip.

In consequence of his increasing emaciation, I considered some surgical procedure ought to be had recourse to; therefore, after consulting with some of my medical brethren, I determined to perform excision. Accordingly, on the 2nd of June last, assisted by several members of the profession, I proceeded with the operation as follows:—The boy having been placed under the influence of chloroform by my friend, Dr. Adamson, of Rye, I commenced by making a T-shaped incision over the head and great trochanter. Finding, on examination, the neck of the bone to be diseased, I deemed it expedient to cut through the bone just below the great trochanter. The acetabulum being also to a certain extent carious, I freely applied the gouge, removing a portion of the upper and back part of the acetabulum, as also a portion of the floor. The parts were then brought together with a few sutures and strips of adhesive plaster, a place being left open for the exit of matter. A long, straight, bracketed thigh-splint, with a foot-board and thigh-piece attached (my own design), was next applied, and the wound dressed with wet lint. After this the boy was removed to his bed. There was no hæmorrhage, and consequently no ligatures required; the effects of the chloroform soon passed off, unattended by sickness.

June 4th.—Slept well, and does not suffer much pain, the wound looking healthy. Ordered some strong beef-tea and port-wine.

23rd.—To-day the splint was removed, wound looking healthy. Ordered mutton and beef-tea and a pint of stout daily.

25th.—Complains of pain in the upper and inner part of the thigh, which looks red and feels

hard. Ordered a bread poultice, and an aperient draught, and some quinine and ammonia mixture three times a day.

July 1st.—Opened the abscess, and let out nearly half a pint of matter. To continue poulticing.

3rd.—Much easier; the wound discharges but little, and he can now raise his leg of his own accord, and flex it to some extent on the pelvis.

5th.—Progressing favourably, and free from pain.

Sumner, July, 1857.

THE ELECTRIC CAUTERY AND ITS APPLICATION TO DENTAL SURGERY.

By THOS. H. HARDING, Esq.

It will be as well, at the commencement of the present communication, just to glance at the *history* of the introduction of the Electric cautery, and its general application in surgical practice. Crüsell, of St. Petersburg, was the first to employ it for surgical operations; although his researches generally, on its use, were not published before the year 1846, yet his operations bear date anterior to those of any other surgeon.

In 1844, M. Louyet, of Brussels, recommended the operation for destroying the dental nerve; and in 1845, Heider, of Vienna, at the instigation of Steinheil, of Munich, cauterized the dental nerves with the galvanic cautery. In 1850, Mr. Marshall was the first to employ it in practical surgery in this country, but his researches were not published before 1851, when he brought the subject before the Royal Medical and Chirurgical Society in April of that year. In the same year I published a short paper on its use in dental surgery, being the first to adopt it in that special branch of surgery in this country; and in the same journal (*THE LANCET*), a paper also appeared from Mr. Waite, recommending its use in dentistry.

Since 1851, it has been generally employed by others in England, France, and Germany.

Being deeply impressed with the great value of this powerful agent in many of the most delicate operations which come under the hand of the general surgeon, from reading the papers communicated to the Medico-Chirurgical Society by my friend, Mr. Marshall, giving in detail an account of the manner in which he employed the heat of electricity for the purpose of limited cauterization in surgical disease, an abstract of which appeared in *THE LANCET*, in May, 1851; and, again, a subsequent report of several operations performed by him, in which the results showed most satisfactorily the great value of this new agent, it struck me that its introduction into the practice of dental surgery would prove of inestimable value and of the greatest possible assistance, in effectually destroying the sensitive pulp of a decayed tooth, in a more certain, rapid, and safe manner than any of the numerous methods with which dentists are already familiar. I therefore conceived the idea, that a platinum wire, heated in the manner as recommended by Mr. Marshall,

might be made available for the instantaneous destruction of an exposed tooth-pulp. I accordingly communicated my idea to Mr. Marshall, who fully concurred with me as to its importance. It had already suggested itself to his fertile mind, and had been mentioned by him as one of the obvious applications of his method of operating with the electric heat. His experience in this matter, moreover, enabled him to suggest for the purpose a very simple and suitable apparatus, which shall shortly be described.

In the first volume of *THE LANCET* for 1851 there appeared a short communication from me on the destruction of the dental pulp by the heat of electricity, wherein I confidently stated that it might be regarded as a great advantage by all engaged in the practice of dental surgery. I had employed it for some months previous to the appearance of that paper, and fairly and justly claim to have been the first to use it in dental surgery in this country. In the same number of that journal was described an instrument for applying electric heat in dental operations, by Mr. Waite; but I had used it before the time mentioned by Mr. Waite, and moreover was not acquainted with his invention.

Now, other methods have been employed for applying heat to destroy the nerve of an aching tooth. The old village doctress has long been famous for curing toothache by the thrust of a hot needle or pin into the tooth, and dentists have occasionally used a heated wire. The actual cautery has long been a practice in vogue for the purpose of destroying the sensibility of the tooth-pulp from caries, and has been generally performed by heating a long piece of steel, small at one end, but terminating in a bulbous head about the size of a small pea, which is inserted into a handle. From the bulbous extremity projects a platinum wire, smaller or larger according to circumstances; the bulbous end being heated in an ordinary lamp until a red or white heat is obtained, communicates the heat to the platinum wire, which is then immediately used for the purposes required. Another method of applying hot wires to the teeth is by means of platinum sponge and hydrogen gas, known as *Géropile*; but I have had no experience of the use of this.

In regard to the use of the actual cautery, let us see what Mr. Snell says of it in his book on the teeth: he says, "Even now, it (the destruction by the actual cautery) is frequently performed in an improper manner, which will account for the want of success which often attends it when attempted by ignorant men. As the operation is very generally performed, it would be more properly styled carbonizing the cavity of the tooth generally, than simply cauterizing the membrane." It must be obvious to every one that the great cause of failure, such as here described, depends upon the difficulty experienced in obtaining a sufficient and permanent amount of heat; for it is well known that wire alone, which is the only substance sufficiently minute to be applied within the interior of a tooth, can retain the heat but for a very limited

time. It is therefore necessary, in the hands of some dental surgeons, who are not satisfied with its effects, to apply it to the tooth certainly more than once, perhaps several times in succession. This must prove of serious injury to the teeth, as it will carbonize a large surface of the tooth generally, instead of cauterizing or destroying the tooth pulp solely. Now all this is completely removed by the use of the electric cautery, which can never be surpassed for convenience and ready mode of application, besides possessing a steady, uniform, and constant degree of heat, which can be continued at pleasure until the proper effects are obtained, and then as magically discontinued by destroying the connexion between the positive and negative wires. It has the advantage also, over every other known method of cauterizing, that it can be introduced into the patient's mouth, and actually placed within the cavity of the tooth, before it is made to become incandescent,—an advantage that cannot be over-estimated by those conscientious dental surgeons who are so frequently called upon to destroy a tooth-pulp.

The *nature of the apparatus* which I am in the habit of using may be thus described. I shall speak of the battery first, and the cauterizer after:—

The *Battery* is a compound one of Smee's, and consists of six pairs of plates of zinc and platinized silver, contained in six cells, which are set in action by one fluid—viz., dilute sulphuric acid. The battery may of course vary according to the choice and taste of the operator, but it is desirable to render it as elegant and as simple in arrangement as possible. When I first employed the electric cautery, I used a battery of two pairs of plates in a single cell. I now prefer the larger battery of six cells, because a large battery with weak acid will last longer than a small one with strong acid; besides this, the action of the battery is more uniform, and lasts much longer. A Smee's battery is the most convenient of application; it is always clean, ready when wanted, and has the advantage moreover of cheapness. Grove's and Maynooth's batteries are not fitted for the purpose required, as they are troublesome, and often give out fumes of nitrous acid, which are decidedly objectionable.

The *Cauterizer* is thus constituted:—The terminal six inches of the poles, which are of copper wire plated, are supported on an ebony or ivory handle, upon the side of which one of the poles is interrupted at a particular point. The extremities of the poles are connected by a piece of platinum wire, a hundredth of an inch thick, and three-quarters of an inch long, which is bent into a loop. The sides of the loop are then brought parallel and nearly close to each other, without touching, and it is thus introduced into the pulp cavity of the tooth to be operated on. By a slight pressure on one side of the handle, the interrupted pole is temporarily joined, and the platinum wire immediately becomes brilliantly heated, as it lies in contact with the tooth-pulp. Sometimes, however, I have found it desirable in

the first place, to complete the galvanic current, and thus heat the platinum wire, before bringing it to bear upon the exposed pulp. The flexibility of the loop of wire enables the operator to bend it in any direction previously to use. In this way I have succeeded in rapidly destroying the pulp of decayed and condemned teeth, and have proceeded, sometimes after a few minutes, to the operation of filling with gold, or with other suitable stoppings, as Ash's metallic paste. I use several cauterizers with extremely thin wires, made expressly for myself by Maddox, of University-street.

(To be continued.)

ON TUBERCLE OF THE CRUS CEREBELLI, WITH SYMPTOMS SIMULATING CHOREA.

By T. H. SHUTE, M.D.,

PHYSICIAN TO THE TORBAY INFIRMARY.

As any case tending to elucidate the physiology and pathology of the brain is of importance, I send the following, thinking it presents many points of interest to the readers of *THE LANCET*:—

Elizabeth S—, aged twenty-six, married three years, no family, was admitted under my care March 11th, reported to be suffering from chorea. She presented the following appearance:—Countenance not sunken nor pallid, and not evidencing pain; features not distorted; muscular and adipose tissues sufficiently developed; tongue furred, protruded with a jerk; head constantly moving to the left side; articulation very imperfect; understands and answers everything that is said to her; constantly talking whilst awake; left arm in perpetual movement, being jerked across the chest (during sleep the convulsive movements cease, and she is quite tranquil); total inability to support herself on her legs, but she can move them up in the bed; sensation not affected; has a constant short cough, as if caused by accumulation of mucus; pulse 90; urine acid; no albumen. There was much difficulty in examining the chest. Left side appeared duller than right; mucous and sub-crepitary râles, with respiratory sounds of the diffused blowing type, on that side.

The history of the case was very obscure. We could not ascertain that she had ever complained of headache; had had occasional cough for two years; had never spat blood. Four months since, whilst out walking, she suddenly fell against a wall, but without loss of consciousness, since which time she has been in her present condition.

Diagnosis.—Organic disease at the base of the brain, probably softening, near the pons Varolii; tubercular disease of the left lung. She was ordered blisters to the calves of the legs; compound ipecacuanha powder, ten grains.

March 12th.—The Dover's powder had been repeated, and at the period of the visit she was in a profuse sweat, and in a quiet sleep; the movements of the arm had ceased.

13th.—Still quiet; takes her food when roused.

14th.—Very noisy; movements of arm and head have recommenced. Ordered, acetate of morphia, potassio-tartrate of antimony, of each one grain; water, one ounce: one drachm to be taken every three hours till she was quiet.

15th.—Only two doses of mixture had been taken, and she was in such a state of prostration as to require brandy and ammonia to rouse her.

16th.—Recovered from the state of prostration; movements of arm had ceased, and did not return; right pupil dilated, contracts under the influence of light, but dilates again immediately.

She died on the 6th of April.

Autopsy, forty-eight hours after death.—Vessels on convexity of brain congested; arachnoid membrane adherent along the upper and posterior edge of the longitudinal fissure; no evidences of recent inflammation of the membranes; consistence of brain firm, somewhat congested; no effusion into the ventricles; in slicing downwards, no appreciable lesion discoverable. At the base of the brain the right crus cerebelli was softened to the depth of a line on its anterior aspect, and in its substance were imbedded three crude tubercles the size of a pea, one in the centre, and two on each side, forming a triangle. The lungs were not taken from the thorax, but the posterior portion of the left was infiltrated with crude and softened tubercles.

Remarks.—The diagnosis in this case was somewhat obscure. On the one hand, we had all the symptoms of chorea, such as the constant agitation of the arm and head, the jerking protrusion of the tongue, difficulty of articulation, and perfect quietude during sleep. On the other hand, the age was not that at which chorea commences in the great majority of cases, and the mode and suddenness of the invasion of the malady was opposed to the idea of its being a purely nervous affection. Therefore we came to the conclusion that there was organic lesion and that its seat was the base of the brain, which was verified by the autopsy. The deposition of tubercle in the brain of the adult is very rare, though common in children, "so much so that Louis only met with one case in 117 cases of phthisis; and Ingol, in his extensive practice at St. Louis, has only met with eight cases, and in six of these no symptom existed during life."* It will be remembered that in the experiments of Majendie, when he divided one of the crura cerebelli, the animal immediately began to rotate to the same side. Now here, although the patient in all probability fell *sideways* against a wall, the perpetual movement of the arm took place on the *opposite* to the diseased crus, the fibres of which were all but destroyed by disease; but the case is confirmatory of the proposition, "that individual parts of the brain answer individual purposes, as regards the power of regulating our movements."

July, 1857.

ON A CASE OF ENCEPHALOID TESTIS IN THE RIGHT GROIN; REMOVAL; RECOVERY.

By EDWARD J. SPRY, Esq., M.R.C.S.E., &c.,

SENIOR SURGEON TO THE ROYAL CORNWALL INFIRMARY.

W. O——, aged twenty-eight, a sailor, residing at Newlyn, near Penzance, a muscular man of moderate stature, and of florid complexion, states that he was always conscious of the presence of a small, round, hard swelling in his right groin, which gave him no uneasiness, until about two years since, when an accident occurred which showed him that the testicle had never descended into the scrotum. He was lifting a bale of tobacco on board ship at Buenos Ayres, when he suddenly felt something "crack" in his groin which occasioned a very painful swelling; and this continued to increase for about twenty-four hours. The surgeon whom he consulted told him that it was not hernia, and gave him an evaporating lotion to apply to the swelling. After three days it had subsided to the size of half of a pullet's-egg, and he was again able to resume his work. During this period he never felt any pain from coughing, and his bowels remained easy and open. The non-descent of the testis was then pointed out to him.

The circumstances under which the testis emerged from the inguinal canal, in this case, were very similar to those described by Mr. Hamilton,* of Dublin, in the *Dublin Quarterly Journal* for May, 1852, who says that "a man who had always a swelling in his right groin, supposed to be a rupture, while lifting a heavy weight aboard ship, felt something crack 'like an egg-shell' in the situation of the tumour, attended with great pain, shooting up the back, and round the hip;" but here the parallelism between the cases ends, as the structure of the gland appears to have remained normal, and its removal was called for by the acute pains which followed its displacement.

On the return of W. O—— to Cornwall, in March, 1855, he felt such slight inconvenience from the presence of the tumour that he did not seek advice respecting it until December of the same year, when he became a patient at the Penzance Dispensary, under Dr. Barclay Montgomery and Mr. Millett, for a few weeks, and went to sea again in the spring of 1856. He says that the swelling gradually increased until last November, when he again sought assistance at the dispensary; but the medical officers, rightly considering that an operation would afford him the only chance of relief, advised him to come to the infirmary.

The patient was admitted on the 3rd of December, 1856. The right groin was occupied by a large, oblong tumour, extending from above the internal abdominal ring to the scrotum, a little below the level of the root of the penis. It was

* Observations on the Symptoms resulting from an Undescended Testicle, which were of so painful a nature as to necessitate its removal. By John Hamilton, Surgeon to the Richmond Hospital, &c.

firm, slightly irregular on its surface, and movable for about two-thirds of its bulk; but the upper third was the thickest and least movable, as well as the firmest part, so that there was no possibility of ascertaining the exact nature of its connexion with the canal. In front of this part of the tumour some fluctuation could be detected. No impulse was communicated to any part of the tumour by coughing; it was not painful, excepting under pretty severe pressure; there was no uneasiness in the lumbar region, nor did he complain of pain passing in that direction from the swelling. There was no œdema about or below the groin.

Considering that these circumstances indicated the existence of a retained and diseased testis, with whatever other complications it might be associated, I did not hesitate to comply with the urgent wish of the patient for its removal, and accordingly, with the concurrence of my colleagues, on the 11th of December, chloroform having been administered, I proceeded to remove the tumour by making an incision through the integuments, of about six inches in length, in the line of its long axis. There was no difficulty in the dissection until the upper and back part of the tumour was reached, and then, from its great firmness and thickness, and its overlapping the point of junction with the deeper-seated parts, great caution was required. The space between its posterior surface and the internal ring was very narrow, so that the division of the layers of fascia covering the cord was not easily effected. The cord was secured by passing a ligature around it, excluding the vas deferens, and when divided it was immediately retracted within the internal ring, but without establishing any communication with the abdomen. The hæmorrhage attending the operation was so slight that no vessel required to be ligatured. The integuments were approximated by sutures, and the parts supported by soft compress and roller.

The diseased mass proved to be an enlarged encephaloid testis, and the epididymis was in the same stage of degeneration. The section of the cord, however, appeared to be free from disease. Between the upper and anterior surface of the testis and epididymis was a small cyst, containing about three drachms of a transparent straw-coloured serum; and projecting from this cavity was a curious pyriform sac, the peduncle of which was about one inch and a half long, filled with the same sort of fluid, and indeed communicating with the cavity described. In his excellent "Practical Treatise on the Diseases of the Testicle," Mr. Curling has the following remarks on their singular formations:—"Small spherical or oval cysts, not larger than a pea, may frequently be found beneath the serous membrane covering the head of the epididymis, generally containing a limpid serum, and sometimes they project the tunica vaginalis before them until they become so far separated from the part on which they originally formed as to be attached only by a narrow peduncle" (p. 181). Mr. Curling gives a repre-

sentation of several of these little cysts adhering to a testis, copied apparently from Morgagni.

The convalescence of the patient was rapid and uninterrupted. He slept well the first night; the ligature separated from the cord on the tenth day; the cavity granulated most favourably, and the edges of the divided integuments were united by a firm linear cicatrix. He left the infirmary on the 22d of January last, in good health and spirits.

It appears that the only two cases of excision of diseased testes, retained in the groin, performed in this country, are those recorded by Mr. Arnott,* of the Middlesex Hospital, and by Mr. Storka,† of Gower-street. In both these cases the diseased gland was removed without making any communication with the abdomen, the patient in the first case surviving the operation three days, and in the second about fourteen months. I do not find any other similar case, as having occurred in British surgery, in the pages of *THE LANCET*, and I have carefully examined it for this purpose from the commencement.

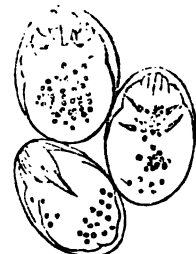
Having had an opportunity of submitting the removed mass to Mr. Paget, he has kindly examined it, and says that he considers it to be a case of medullary disease, and at my request he placed the preparation in the museum of the College of Surgeons. As a further proof of the great rarity of this diseased structure in the locality described, Mr. Paget said that 'he had never seen a specimen before, although there are two casts representing it in the museum at Bartholomew's.'

Truro, 1867.

ON THE DIAGNOSIS OF SCABIES BY THE PRESENCE OF THE OVA OF THE ACARUS AMONGST THE SCALES OF THE EPIDERMIS.

BY DR. GULL.

SCABIES often presents such difficulties in diagnosis by the eye only, that every additional microscopic aid is valuable. It is admitted not to be always an easy task to find the acarus itself; but each animal (female) lays many ova, which are readily found attached to the roughened and undermined cuticle in the neighbourhood of the vesicles. I need not say the ova are well known, but their presence as a diagnostic test of



Ova of *Acarus Scabiei* $\frac{1}{8}$ of an inch in long diameter.

* Vide *Medico-Chir. Trans.*, vol. xxx. p. 8, et seq.
† *London Medical Gazette*, vol. xxxix. p. 161.

itch has been overlooked. The ova are about $\frac{1}{16}$ of an inch in their long diameter, and in many instances the foetal acarus can be seen within the shell.

June, 1857.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

SIR C. LOCOCK, BART., PRESIDENT, IN THE CHAIR.

ON THE EFFECTS OF THE BULGARIAN CAMPAIGN ON THE SUBSEQUENT HEALTH OF THE BRITISH TROOPS IN THE CRIMEA, AND ON THE INCREASED RATIO IN THE LOSS OF STRENGTH DUE TO OTHER CAUSES. By William Aitken, M.D. *Communicated by Dr. Jenner.*

The author stated that the pernicious influence of the residence in Bulgaria had been hitherto entirely disregarded in estimating the sanitary condition of the troops during the first seven months' occupation of the Crimea, and that in all future pathological inquiries into the nature of the diseases from which our troops suffered, not only in the camp before Sebastopol, but also at Scutari and other local hospitals, the influences noticed in this paper must occupy a prominent place. He observed that the great comparative losses which seem to have been sustained by the drafts of new men also required investigation, but that unless we are put in possession of the ages of the recruits sent out, their exact numbers and periods of service, their admissions to hospital, deaths, and invaliding, as distinct from those of the other troops, the comparative losses they sustained cannot be accurately determined. In this paper the author classified the Crimean army into two parts—namely,

1st.—Into the troops which served both in Bulgaria and in the Crimea, and which may be called the ex-Bulgarian part of the army.

2ndly.—Into the troops which served in the Crimea only, and which may be simply termed the Crimean troops.

The statistical information upon which the statements contained in the paper are founded exists in the following records—namely,

1. Parliamentary paper, No. 42, of the session 1857, giving the date of arrival and strength of each regiment.

2. Parliamentary paper, No. 218, of session 1855, (pp. 474–479,) giving the same information regarding the drafts sent out.

3. It is known from various sources what were the respective regiments which served in Bulgaria (*e. g.*, Parliamentary papers No. 218 and No. 42, and Russell's War).

4. The returns the author had been permitted to use, collected from the individual regiments, giving the monthly state of the strength of each regiment, and the diseases by which its losses

were caused. From these tables, the general abstract was made up, which is published by Sir Alexander Tulloch at page 171 of his volume, entitled, "The Crimean Commission and the Chelsea Board."

The conclusions arrived at by Dr. Aitken are—1. That the inactive residence in the malarious district of Bulgaria, during a period of three months, exercised a persistent pernicious influence upon the subsequent health of the troops in the Crimea, which continued to make itself felt, more or less, throughout the campaign, and more especially during the first seven months. 2. That the loss to the strength of the army during the first seven months was greatly more in those regiments who had been in Bulgaria, than amongst those troops who had not lived there, but who served during the same period in the Crimea, and who went through precisely similar hardships during the campaign. 3. That the loss of strength to the whole army was greatly increased by the proportionably very large amount of loss sustained by the drafts sent out to recruit the regiments. 4. That the general mortality was increased amongst the ex-Bulgarian troops, and that the invaliding was nearly doubled amongst them. 5. That the persistent pernicious influence of the residence in Bulgaria showed itself in a remarkable manner by the unfavourable results of the surgery of the war amongst the ex-Bulgarian forces, compared with the results in the forces which served only in the Crimea; but that on the whole the results of the surgery of the war were highly favourable compared with what is obtained in our large London hospitals.

The statistical results obtained were offered as approximative conclusions to the truth, from data not sufficiently extensive to give such conclusions with absolute accuracy.

When the sanitary state of the ex-Bulgarian division of the army was contrasted with the Crimean, it was observed—

1. That the admissions to hospital were greater amongst the Crimean portion of the army than amongst the ex-Bulgarian, and contained a greater proportion of enteric diseases, cholera and scorbutus; while amongst the admissions from the ex-Bulgarian part, fevers and pulmonary diseases exhibited a higher ratio than in the Crimean part. 2. That while the admissions were greater from the Crimean portion, the mortality, compared with the amount of admissions, was much greater amongst the ex-Bulgarian portion of the army than amongst the Crimean. The causes of death which produced the greatest mortality stood in the following order:—1. Cholera. 2. Frost-bite. 3. Enteric diseases; and 4. Fevers, amongst the ex-Bulgarian part. And 1. Cholera. 2. Enteric diseases. 3. Fevers. 4. Frost-bite, amongst the Crimean troops.

With regard to fevers, it was observed that the pernicious influence of the residence in Bulgaria showed itself in the deteriorated constitution of the soldier; and while the admissions to hospital were greater in proportion to strength amongst

the ex-Bulgarian forces, the deaths were also more numerous (the per-centage nearly doubled), thus proving how readily that portion of the army succumbed to disease; being "used up" when they left Bulgaria, they were less able to cope with disease, and more of them died. With regard to cholera, it was interesting to notice the similarity of pathological phenomena presented by the history of that disease in Bulgaria and in the Crimea, compared with its known phenomena as an epidemic disease. Up to, and including, the period from October till May, 1855, two separate epidemics may be said to have affected the army. The ex-Bulgarian campaigners were exposed to both of them. During the first epidemic, while in Bulgaria, they suffered severely; and, indeed, so long as they remained in the vicinity of Varna, the disease never left their camps; they carried it with them to the Crimea, and it continued to seize upon, and kill, many victims on the march from Old Fort to Balaklava, and more especially after the battle of the Alma, and on the 'famous flank march, when the fate of the more feeble soldiers were at once sealed by death. The Crimean epidemics of cholera present the following remarkable antithesis compared with the other classes of diseases:—

1. The per-centage of admissions on the average strength of the troops serving in the Crimea only was much greater than the ratio of admissions amongst the ex-Bulgarian troops, and the per-centage of deaths from cholera was also greater in the former than amongst the latter.

2. But the per-centage of deaths, calculated on and compared with the admissions, was greater amongst the ex-Bulgarian forces than amongst the Crimean troops.

According to what is known regarding the nature of this remarkable disease, it may be noticed that already, during the Bulgarian campaign, the more susceptible of the troops had been seized with the disease, and many had already died. The disease, to use a common expression, "had worked itself out" upon them; so that fewer were in a condition to take the disease subsequently amongst the ex-Bulgarian troops while in the Crimea; and, therefore, fewer of this part of the army died in the Crimea from cholera compared with the strength. On the other hand, it may be observed, that on account of the "used up" condition of the ex-Bulgarian troops, a much larger per-centage died amongst them of those who were attacked than amongst those who were attacked amongst the Crimean troops. The ratio of admissions for pulmonary diseases was nearly the same in both divisions of the army; but the deaths amongst the ex-Bulgarian troops were greater than amongst the Crimean forces, and the number invalided were also greater amongst them. It would be interesting to know how far such affections were purely idiopathic, and how far a tendency to the development of tuberculosis had, or had not, been engendered by the Bulgarian or Crimean campaigns. In the personal experience of the author, as well as that of Dr. Fraser, of the

North London Hospital, phthisis was a rare disease at Scutari. The period of latency of malarial poison is another topic deserving of especial investigation in the experiences of the Bulgarian campaign. It is known that on the return of our troops from Walcheren, fresh cases of fever continued to occur so late as five, six, eight, nine, and even ten months afterwards, so that the persistent pernicious influence of the Bulgarian campaign was not without a parallel. The reduction of strength of the ex-Bulgarian part of the forces compared with the Crimean is approximately inferred from the following considerations—namely: 1. The actual deaths in each portion of the army, and the ratio of these to the admissions and to the original strength. 2. The ratio of death and invaliding compared to the admissions, and to the original strength of each of the two divisions of the army. 3. The per-centage of drafts to recruit the strength of the troops in each of the two divisions of the army. 4. The actual loss of strength by sickness, deaths, and invaliding, in each of the two portions of the army; drafts had not arrived. The severe duties of the front being chiefly borne by that portion of the army which served in the Crimea only, the loss to the ex-Bulgarian part could not be said to be increased by the severe and necessary operations of war during the siege. Great as was the loss to the corps in front, it was much below what some of the corps suffered who were not in front—e.g., the 46th, the 95th, 63rd, 33rd, 23rd, 44th, 20th, and 50th regiments. The loss in these eight corps averaged seventy-five per cent. during the seven months (Colonel Tulloch): and it is worthy of notice, that six out of these eight regiments were ex-Bulgarian forces; and with the exception of the 46th, whose great loss appears to have been from cholera immediately after their arrival, the cause of the great mortality amongst the other regiments is not accounted for. More full and accurate details will yet, no doubt, show how malarious influences imbibed in Bulgaria developed themselves by a zymotic like action, under the melancholy state of things which Sir Alexander Tulloch and Sir John McNeill so energetically and boldly brought to light.

Dr. A. P. STEWART remarked that the latency of diseases, especially those of an intermittent kind, was often overlooked; but had been clearly established in the paper. He (Dr. Stewart) had met with two cases in which malarious disease had remained latent for a long period prior to its manifestation. One was that of a soldier who, during the war in Spain, had been exposed to great privations and malarious influences of an intense kind, to which many of his fellow-soldiers had succumbed. It was not until thirteen or fourteen months after his exposure to those influences, that the intermittent disease declared itself, and then he experienced one of the most violent attacks he (Dr. Stewart) had ever seen. He remembered a similar case about two years ago in the Middlesex Hospital. The long residence of the troops in Bulgaria he thought

of the most culpable pieces of mismanagement, the authorities having been warned that the very places where the troops were encamped were those that ought especially to be avoided.

Dr. WEBSTER said it had been long observed that persons living in an unhealthy climate occasionally exhibited the effects of such residence after a considerable time had elapsed. He remembered the case of a child who, six weeks after her return from Lincolnshire, was attacked with ague, the disease having been no doubt induced by her residence in that county. In like manner persons residing in the malarious districts of Italy frequently gave no indications of disease till some time afterwards. As to the residence of the troops in Bulgaria, it was a military and political movement, and ought not to be regarded only in a sanitary point of view. He had heard it stated that the whole mortality of British troops in the Crimea from all causes was less than 20,000 out of 102,000 men—a considerably less proportion than was consistent with the author's statements.

Dr. FRASER was one of the medical officers at Scutari, and he did not agree with the author in thinking the hospital an ill-chosen one. The Smyrna Hospital he considered badly selected. He had remarked the small number of cases of phthisis admitted—a proof, he thought, of the good selection of the recruits originally.

ON THE CONCRETIONS OF THE PROSTATE:—THEIR MODE OF PRODUCTION, AND THEIR RELATION TO THE FORMATION OF PROSTATIC CALCULI; THE RESULT OF OBSERVATIONS MADE UPON UPWARDS OF FIFTY DISSECTIONS OF THE PROSTATE. By Henry Thompson, Esq., M.B., F.R.C.S.

The existence of "concretions" of microscopic size has been established in every one of the fifty specimens of the prostate exhibited. In many their size was that of a poppy-seed. They had been found also in the organ at fourteen years of age. Their physical and chemical characters (the latter by rigid analysis) were given at considerable length. Their existence was concluded to be a necessary result of the performance of natural functions on the part of the prostate. After numerous observations, it appeared that the formation of a concretion frequently originated in the aggregation of a yellowish matter often seen within the secreting nuclei lining the gland-ducts and pouches, often found free in yellowish granules, sometimes stuffing small ducts and follicles, and seen floating in the form of small prostatic fluid as well as in the contents of the vesiculæ seminales. In the larger masses of this yellow matter, entirely occupying the interior of crypts or follicles, the small granules may be seen cohering, or as if fusing together, and presenting an appearance identical with that which is often seen existing in the centre of fully-formed concretions. It was concluded that the coalescence of these yellow granules, or of the nuclei charged with them, their partial fusion into a mass more or less homogeneous, the stratification in part of this

mass itself, or more probably the deposit upon its surface of fresh layers of fluid matter similar to that which originally constituted the interior, and finally, some addition of opaque earthy matter to it, either by infiltration or accretion (through irritation of the secreting membrane around, from the pressure of the newly-formed body, as observed in numerous other instances referred to), were the steps by which the production of a "prostatic concretion" was very frequently accomplished; and its connexion with "prostatic calculus" illustrated. The views of other observers were quoted and discussed at considerable length. Numerous drawings of these bodies in various stages of formation, as well as the original objects themselves under microscopes, illustrated the communication.

ON THE USE OF THE SPECULUM IN THE DIAGNOSIS AND TREATMENT OF UTERINE DISEASES. By Dr. Robert Lee.

The author referred to the tabular statement of 220 cases of real and imaginary disease of the uterus, published in the 38th volume of the "Medico-Chirurgical Transactions," and presented in a similar tabular form the details of 80 additional cases, which had since come under his observation. Of the 300 patients, 47 were unmarried; one had barely completed her 18th year, several were under 20, and the majority under 30 years of age, and were suffering from hysteria, leucorrhœa, dysmenorrhœa, or some nervous affection of the uterus, without inflammation, ulceration, or any structural disease or displacement of the organ. In Case 256 the patient had been told that the womb was prolapsed and much ulcerated, and an instrument had been introduced for six weeks, with an aggravation of all the symptoms. The hymen was found so perfect on examination that it was impossible to reach the os uteri without using an unjustifiable degree of violence. On the ground of morality, and on every other ground, he could see no defence for the employment of the speculum in these 47 cases. Of the 300 patients 70 were barren, and the sterility was not removed nor the other symptoms relieved in a single instance. Several of these individuals spoke with horror and shame of the treatment to which they had been submitted. A considerable number of the cases were suffering from cancerous disease, in all of which the symptoms seemed to have been aggravated by the treatment. In Case 236 the character of the disease was unmistakable, but after an examination with the speculum a favourable prognosis had been given, and the actual cautery employed for months, and hopes of recovery held out to the last. The author expressed his conviction, that neither in the living nor in the dead body had he ever seen a case of simple ulceration from chronic inflammation of the os or cervix uteri; and to apply the term to states of the os uteri in which the mucous membrane, or, as it is termed by some, the basement membrane, is not destroyed by ulceration, was an abuse of terms calculated only to deceive and

mislead the members of the medical profession, from whom the truth has been carefully concealed. The speculum emanates from the syphilitic wards of the hospitals at Paris, and it would have been better for the women of England had its use been confined to those institutions.

Dr. EDWARD SMITH read a paper, illustrated by a drawing from life,

ON THE CLOSURE OF THE THROAT WITH THE LARYNX
AT ITS UPPER ORIFICE.

In this paper the author reports his observation, that the closure of the larynx at its upper orifice is accompanied by a simultaneous closure of the œsophagus at that part, and the conversion of the pharynx into a *cul de sac*. It may be seen more or less perfectly in all cases in which the epiglottis can be freely exposed. It is produced by the elevation (ordinarily) of the larynx with the epiglottis, erect to the extent of about half an inch, and a carrying backwards of the whole of the posterior wall of the pharynx. At the same time the posterior wall of the pharynx is drawn forwards, its lateral walls with the tonsils are drawn inwards, near to the central line, and partially everted, and the whole pharynx at the root of the tongue and epiglottis is pursed up so as to be drawn inwards and upwards towards the central line. When the action is extreme the epiglottis is placed in contact with the posterior wall of the pharynx, and the pillars of the posterior arches apply themselves laterally to the same fibro-cartilage. All these actions are consentaneous and co-ordinate, and can be produced, withdrawn, and repeated at will, and by them the cavities of the lung and stomach are cut off from communication with the mouth. He considers it to be of the nature of a sphincter action, and to be due mainly to the middle and perhaps the superior construction of the pharynx, by which the posterior wall of the pharynx is brought forwards, the cavity of the pharynx contracted, and the larynx made to ascend. It is produced in expulsive efforts, and may be felt by inquirers in the act of "hawking," when, after the preliminary closure of the larynx, the air is forcibly expelled, and conveys to them the sensation indicative of the closure of the partial reopening. It is perfect in the first part of the act of vomiting, when the œsophagus is then closed, and is found more or less perfectly in coughing, in the expulsive efforts of dejection, and in the act of raising weights. The epiglottis is not carried back to the pharynx in all attempts of this kind—attempts which necessarily vary much in intensity; so that it is open to inquiry how far the presence of the epiglottis is necessary to the closure described? The author thus considers this to be a normal and a protective power, but that it is also capable of assuming a spasmodic or continuous action, and thus to render this closure a diseased action. He referred to the dyspnoea resulting from inspiration of air of different degrees of temperature, of irritating vapours, as

chloroform; as also the deglutition of fluids or solids which are mechanically or chemically irritating; to the dyspnoea attending bronchitis, whooping-cough, laryngismus stridulus, epilepsy, globus hystericus, and to the gurgling in the throat in the act of dying, as subjects for inquiry in reference to this mode of closure. He did not form any opinion as to whether true closure of the larynx can occur at the vocal chords without deposit.

Mr. HENRY LEE said he had seen a case at the Lock Hospital in which the patient had lost the whole of the upper maxillary bone, and the back of the fauces could be brought into view, enabling him (Mr. Lee) to observe that at each act of deglutition the sides of the pharynx were approximated, almost meeting in the centre, in the way described by Dr. Smith.

Dr. RICHARD QUAIN thought that the author had been describing the ordinary phenomena of deglutition, which he had confounded with the closure supposed to take place at the upper part of the larynx.

Mr. WOOD considered that the bony attachments of the pharynx were such as to prevent any lateral action which could influence the glottis, and that the action which had been described had reference only to deglutition.

Dr. SMITH maintained that the action was independent of swallowing; and regretted that his patient was not present, that the members might see the movements in question.

HARVEIAN SOCIETY.

Mr. ALEXANDER URE, PRESIDENT, IN THE CHAIR.

Dr. THEOPHILUS THOMPSON read a paper on
THE APPLICATION OF THE MICROSCOPE TO THE
DIAGNOSIS OF PULMONARY CONSUMPTION.

The author observed that the assiduous and discriminating use of the microscope having yielded valuable aid in illustrating various pathological questions, and giving precision to some grounds of diagnosis, it seemed reasonable to anticipate information from the application of this instrument to the examination of expectoration; and he thought it practicable to show that the disappointments which some observers had experienced in their endeavours to avail themselves of this method of investigation did not depend on inadequacy of the means, but might be overcome by care and perseverance. Many years since, Mr. Quekett detected elastic pulmonary tissue in the sputum of patients not previously considered consumptive, and it was for a time supposed that a peculiar granular appearance of the expectoration might be regarded as characteristic of tubercular disease, even in the absence of any trace of elastic tissue. Finding, after a time, that this appearance could not be relied on as an indication of incipient phthisis, and embarrassed by the multiplicity of ob

jects often present in the expectoration, Dr. Thompson for a time discontinued the investigation, any sanguine expectations which he had entertained being further discountenanced by the testimony of Rainey, Addison, and Bennett;* but in an interview with Dr. Andrew Clark (to whose sagacious observation and faithful descriptions† the profession is greatly indebted), he had the gratification of learning that the subject had engaged his attention since the year 1846, and with such success as to enable him to show, in his lectures at Haslar, the real microscopical indications of tubercular sputum. With his friend's liberal and courteous assistance, Dr. Thompson soon became convinced that changes in the pulmonary vesicles, preceding the stage of destruction which occasions the elimination of pulmonary tissue, are manifested in the expectoration, and that information may thus be obtained, not only supplying valuable aid in diagnosis, but also furnishing instructive information regarding the morbid process concerned. Dr. Thompson showed, by a diagram enlarged from a drawing by Schröder Van der Kolk, that when tubercular deposit is present in the pulmonary vesicles, there may be seen, contrasting with the usual epithelial cells, some which are dark, swollen, spherical: some more advanced, larger, and misshaped; others shrivelled or burst, and extruding nuclei, which nuclei, when enlarged, correspond with the "tubercle corpuscles" of Lébert. The author proceeded to show that the sputum of consumptive patients contains materials corresponding in appearance with the elements present in the air-vessels, and that before an amount of disease involving the elimination of elastic areolæ occurs, corpuscles of various sizes, jagged outline, setting free nuclei, and affording evidence of rapid disintegration, may be detected. The general moleculogranular appearance (to which his attention had been originally directed, and which he much regretted having erroneously figured in his "Clinical Lectures") was not conclusive; the sputum which is really characteristic containing isolated masses of moleculogranular material, and having interspersed corpuscles of various forms, overgrown or jagged, and setting free nuclei: the various proportions of pus, or fat, or blood, giving collateral indications of the amount of surrounding deterioration in the lungs; while amongst evidences of rapid progress might be specified the appearance of large and numerous areolar meshes, still retaining their adhesion and elasticity. In chronic cases, portions of this tissue appear, inelastic, teased out, and broken down, in consequence of long imprisonment, whilst a diminished proportion of fat, and the appearance of cholestrine plates, and still more of earthy particles, were often indicative of a mode of restora-

tion. The author proceeded to prove, by a brief narration of cases,—

First, that with the aid of the microscope positive conclusions, not attainable by auscultation, could sometimes be formed regarding the existence of pulmonary disease.

CASE 1.—Mr. —, aged sixty-three, after an attack of pleurisy in the left side, during the spring of 1855, did not regain strength. Dull percussion and prolonged expiratory murmur over a small portion of the right apex were the only important auscultatory signs; but the expectoration, under the microscope, was found to contain blood corpuscles, moleculogranular matter, and lung tissue broken down and unbeat. More positive symptoms of decided phthisis, as reported by his medical attendant in the country (Dr. Sylvester of Trowbridge), soon appeared, and in a few months he died.

CASE 2.—Mrs. E—, a lady, aged thirty-nine, whom Dr. Thompson attended with Mr. Marshall of Bedford-square, during the early months of 1855 suffered from obstinate sickness, which was supposed to depend on gastric affection. The persistency of the sickness and the progressive emaciation inducing an examination of the chest, some dulness on percussion with increased vocal thrill was observed near the sternal end of the second intercostal space on the right side. A little expectoration was obtained, and was found to contain shrivelled cells, lung-tissue, and isolated masses of granules. Some improvement of the general health occurred under soothing hygienic and tonic treatment, and the administration of cocoblein. But early in the year 1856 the expectoration became copious and flocculent; dulness on percussion was more extensively obvious; near the inferior angle of the scapula click was audible, shortly followed by cavernous breathing. In March she died. An interesting contrast to this story was afforded by

CASE 3.—A lady, aged thirty-eight, who, in the autumn of 1852, had almost precisely the same auscultatory symptoms as were observable in Mrs. E—; but the occasional, slight, cloudy expectoration, from time to time examined, exhibited ciliary cells, some with long tails, probably tracheal, some in masses, as though from the follicles; but there were no tubercular elements. In harmony with the encouraging testimony thus afforded by the microscope, the general symptoms continue favourable, and have hitherto, during a period of five years, negatived the gloomy prognostications which an accomplished auscultator had perseveringly maintained.

Secondly: the author adduced the advantage of microscopical observation in confirming doubtful signs.

CASE 4.—E. T—, aged fifty-one, in the winter of 1854 was attacked with cough, hurried breathing, and some symptoms of hectic. The left lung had been extensively consolidated in consequence of pleuro-pneumonia ten years previously. Over a small space near the lower angle of the left scapula a sound could be heard, of

* Dr. Hughes Bennett has lately added his testimony to the value of the microscope in suspected phthisis. Vide *Edinburgh Monthly Journal*, Jan. 1856, p. 535.

† Vide *Transactions of the Pathological Society*, vol. 6, p. 74; and *Lectures*, by Theophilus Thompson, M.D., F.R.S.

which it was difficult to determine whether the correct designation were subcrepitation or click. Dr. Andrew Clark, who also obligingly examined the expectoration, reported that it contained shrivelled cells, large cells with shrivelled nuclei, and some earthy matter, and, without receiving any history of the case, offered the diagnosis of "Slight tubercular deposit, tending to restoration:" a diagnosis which was confirmed by the result.

Thirdly: Dr. Thompson described some favourable indications afforded by the microscope concurrently with amelioration in the general condition.

CASE 5.—Mr. —, aged twenty-two (introduced by Mr. Pinching of Gravesend), five feet nine inches in height, in the summer of 1854 had dull percussion and a murmur over the left pulmonary artery, but no crackle or click; the expectoration, however, exhibited lung tissue, tubercle corpuscles, and blood-discs. He took cod-liver oil freely, at one period to the extent of a pint and a half in a week; and had ioduretted neat's-foot oil (a grain to the ounce) rubbed into the chest. After a time the expectoration became chiefly bronchial, disposed to fibrillate, and free from lung tissue. The weight of this patient increased from ten stone one pound to eleven stone nine pounds. He spent last winter in Madeira.

Fourthly: The author noticed the important evidence sometimes derivable from the sputum, indicative of rapidity in the progress of disease.

CASE 6.—A lady in the country, aged forty-three, who had been for two years the subject of phthisis, but whose friends did not fully realise the danger, had a decided aggravation of cough and weakness. Some expectoration, sent to town for examination, contained blood, copious pus corpuscles, and numerous large meshes of pulmonary tissue, perfectly retaining their form and elasticity. A very unfavourable prognosis was consequently given, which was verified by the death of the patient a few days afterwards.

The author, in conclusion, ventured to express the opinion that his statements, although brief, were sufficient to support his proposition, that the microscopical inspection of expectoration might often afford, at a very early period of consumption, definite information, not otherwise attainable, regarding the nature of the malady; that in later stages of disease it might assist us to estimate the rapidity and progress, and at all times might furnish valuable aid in forming a correct prognosis regarding the course of the complaint. He trusted these few suggestions would stimulate to the investigation some of his professional brethren more accomplished in the use of the microscope, or more fortunate in the enjoyment of leisure.

REPORT OF A CASE OF SECONDARY MALIGNANT DISEASE AFFECTING THE ILEO-CÆCAL VALVE, AND OBSTRUCTING THE INTESTINE.

By CHAS. BROWNING, Esq., M.R.C.S.

Mrs. R—, aged eighty-two when she died, was born at Coopersail, near Epping, and was healthy during childhood, with the exception of occa-

sional attacks of ague. At the age of fourteen she was struck on the right breast, which soon became enlarged, painful, and hard. These conditions increased, and in the course of six years—viz., at the age of twenty—she was deemed the subject of confirmed cancer, and admitted into the Middlesex Hospital, where the mamma was removed, and she eventually recovered. Her restoration, however, was not permanent; for it seems that although she married in the course of two years, and became the mother of seven children, she was not exempt from the subsequent invasion of internal malignant disease, which was attended by a train of suffering for sixty years, seldom perhaps surpassed. Her offspring were sickly and for the most part died young. Three survive, two of whom are subject to scrofulous affections. In the year 1846 she came under my care, and has since been seldom long without requiring medical attendance. Always ailing and much debilitated by the persistent disease, she frequently had most severe paroxysms of abdominal tenderness, a burning sensation along the alimentary canal (compared to a heated iron thrust through the bowels), with lancinating pains shooting especially from the umbilicus to the anus, and feeling as if something were alive within, probably, from the irregular movements of the canal. Unusually dyspeptic, all her symptoms were aggravated by solid food, and reached their climax in about four hours, or shortly after tea, when she would throw herself back in her chair in the greatest agony, gasp for breath, and declare that she was dying. This state generally continued as many hours longer, yielding at length, more or less, to remedial measures. At intervals the appetite was craving, and the bowels were habitually constipated. During an earlier period it appears that local depletion, counter-irritation, &c., were adopted, with only temporary relief, nor perhaps could more be effected by our art; for it became afterwards apparent that the malady which had affected the breast had located itself in some part of the intestinal canal, and was not amenable either to the scalpel or to the influence of medicines. These latter, however, were valuable as palliatives; and benefit was derived at times from tincture of opium with chalk, the endermic application of laudanum by means of flannel saturated with it and placed upon the abdomen, and by small doses of castor oil, followed by soothing enemata. Seldom could any other than spoon diet be taken with impunity. On the 16th of February, 1857, she was attacked by bronchitis in a sub-acute form, and it was accompanied by the old abdominal pains, under the combined influence of which exhausted nature quickly succumbed.

On opening the body, the only parts worthy of particular notice were the small intestines, and the ileo-cæcal valve. The jejunum and ileum were here and there inflamed, and their mucous surfaces presented patches of ulceration. But the chief seat of disease was in the valve, which had lost its normal structure, and with that, its proper

action. That portion of the intestine from which the folds constituting the valve proceed, was thickened and indurated, and the calibre of the bowel was so far diminished as necessarily to have permitted the fæces to pass with difficulty. The valve itself presented a cribriform condition, and the adhesion which had taken place between its free edges left four apertures, each about the size of a large quill. In reference to the early age at which the primary disease appeared, the question arises, whether it was a genuine case of scirrhus. I would reply, with respect to the mamma, that the fact of the patient having been received into a metropolitan hospital, operated upon, and the disease reported as cancer, may in after time be regarded as probable evidence of its malignant character at least. Nor does the age of the patient render such a conclusion irrational, since from the hereditary and blood-nature of cancer (which I use as a generic term only), it is surely not assuming too much to suppose that the mamma, so prone to be the nidus of its specific cancer-cells, should, under the existing influence of a blow, become the seat of their development in a form somewhat different, perhaps, from that subsequently, and very tardily manifested at the ileo-cæcal valve. I can have no doubt that the disease by which it was invested was essentially malignant; and it corroborates the view of the surgeon who excised the breast. One can scarcely arrive at any other conclusion, when we consider the history, the progress, and the termination of the case; added to which, the abnormal growth, as revealed by the autopsy, was hard and fibrous in its texture. Could surgery have given that relief in the secondary disease which was denied to medicine? I think not, because the site of the obstruction was not clearly defined during life, and the impediment itself, not so complete as to justify the operation for artificial anus; to say nothing of the advanced age of the subject, which would have been most unfavourable to its success. The case is interesting in a threefold aspect. It tends to the belief that cancerous or scirrhus disease sometimes exist at an early age; the issue, as regards the breast, encourages timely surgical aid, for the affection of that organ might have advanced more quickly than that of the intestinal canal; and, lastly, it forcibly shows the tenacity of life under the cumulative sufferings of nearly seventy years. At whatever portion of that period the successive deposition may have invaded the intestinal valve, it is not possible to determine with precision, from the abdominal symptoms, the time at which functional disturbance of the canal was either followed or caused by the malignant obstruction; although from the tardy character of malignancy attending the growth of that part, there is reason to believe it occurred comparatively early, a view which is corroborated by the testimony of her daughter, who states that her mother's sufferings were of the same character even while she was bearing children. By careful attention to the appropriate food, and to the relief of the canal, life was main-

tained so long; and it was not until the association of bronchial inflammation ensued, to which both her great age and the season strongly disposed her, that it was thus rapidly terminated.

Dr. GRAILY HEWITT read a paper

ON A CASE OF SUDDEN DEATH FROM PLEURITIC AND PERICARDIAL DROPSICAL EFFUSION (SCARLATINAL?); RELATION OF DROPSY TO SCARLATINA.

The case was that of a girl, aged four, previously healthy, residing in rooms over a stable, who was seized, May 20th, with feverishness, heat of skin, &c. The mother administered jalap, which acted freely. In the evening, the symptoms were relieved. On the night of the 20th, the child was feverish, and frequent micturition was noticed. There was no sore-throat or difficulty of swallowing, and no rash was seen on the skin. On the morning of the second day, the fever had lessened, the breathing was found to be a little quick, but the patient was well enough to go out and play, and ate her food well. Frequency of micturition continued. On the night of the second day she was worse, very restless, and thirsty. Towards the morning of the third day, the breathing became much oppressed. Between five and eight o'clock A.M., she was sick twice, the dyspnoea progressively increasing. At nine o'clock, she was "gasping for breath," but was quite conscious. She was taken to an hospital for relief, and expired on the road home at half-past nine, third day of her illness. She was seen by Dr. Hewitt, for the first time, a few minutes after she had ceased to breathe.

Post-mortem examination.—No anasarca; pia mater a little congested; amount of serum in the lateral ventricles slight; thymus gland larger than usual; its reservoir distended; heart empty, pale, and flaccid; pericardium contained half an ounce of serosity; the pleural cavities each contained about four ounces of a similar fluid. Lungs, for the most part, healthy; bronchial tubes congested. Liver congested; kidneys also congested, cortical substance pale. No urine in the bladder. The other organs were quite healthy.

The author was of opinion that the cause of death was the effusion into the thoracic cavities; and that this effusion had probably been poured out only a few hours before the fatal event took place. He next proceeded to discuss the question as to the cause of the dropsy in this case. He considered this to be an example of acute consecutive dropsy following on a state of the blood induced by the reception of the poison of scarlatina, this being one of those exceptional cases in which the dropsy occurs soon after the commencement of the fever, instead of at a later period. The child had had measles, but not scarlatina; and although it was not proved that the latter disease was present in the immediate neighbourhood, yet the neighbourhood was one frequently infested by it, and diseases of an allied character. Cases recorded by Dr. Miller, and the opinions of Drs. Copland and Willshire, were cited as favouring the supposition that the dropsy

of scarlet fever may be, so to speak, a part of the disease itself—a result of the action of the poison on the blood. He considered that recorded facts were only to be reconciled on this theory, although, in many cases, undoubtedly the dropsy did appear to depend on a state of the kidneys analogous to that which occurs in Bright's disease. The difference between a case of scarlatina with dropsy and no actual disease of the kidney, and one of Bright's disease with dropsy, was the following:—In the one case, the blood was not in a condition to allow of the necessary separation of the urea from it; in the other, the kidneys themselves were at fault. These two conditions, doubtless, react on, and increase each other, in many cases. The dropsy was vicarious, to a certain extent, of the rash. Sudden effusion into the great thoracic cavities, and leading to a fatal result, is, in children, a somewhat rare occurrence, and it is still more rare that dropsy of this character sets in at so early a period of the disease (supposing this to have been a case of scarlatina) as in the instance above recorded.

A discussion followed, in which Dr. Ridge, Dr. Camps, Mr. Cleveland, Mr. Lobb, and Dr. Vinen joined.

PATHOLOGICAL SOCIETY OF LONDON.

DR. WATSON, PRESIDENT, IN THE CHAIR.

MR. SYDNEY JONES exhibited a specimen of

OBSTRUCTION OF THE THORACIC AORTA,

which had been taken by him from the dissecting-room at St. Thomas's Hospital about eighteen months ago. The subject had been supplied from a workhouse. It was a male, aged about forty-five. No history could be obtained of the illness that caused his death. His lungs, however, bore traces of mischief, and it was ascertained that a short time prior to his death he had been under treatment at Guy's Hospital for some bronchial disease. The obstruction was situated at the commencement of the descending thoracic aorta, just below the junction of the ductus arteriosus with the termination of the arch. In the dried state, it seemed as if merely a constriction of the vessel existed; but in the recent state, the obstruction was seen to be complete, a ligamentous cord, about half an inch in length, uniting the two ends of the vessel. The artery contained a quantity of atheromatous deposit, just above the obstruction; at this point involving nearly the whole circumference of the vessel. The three trunks given off from the arch were much enlarged, and were at least double their usual calibre. Below the obstruction the aorta formed a bulbous dilatation, which extended about the length of two vertebræ—viz., from the upper border of the fifth to the lower border of the sixth dorsal vertebra; its diameter was very much increased, and varied from an inch and a half to two inches. Opening into this dilatation were four intercostal arteries on each side; those

of the right side were somewhat the largest, the upper one being the size of a very large goose quill. They were very tortuous, and gradually diminished in size from above downwards, the sixth aortic intercostal on each side having about its normal diameter. The aorta below the dilatation was also enlarged, but began to assume its normal calibre opposite the upper border of the ninth dorsal vertebra, having gradually diminished in size, and being thus made somewhat infundibuliform. The first aortic intercostal artery of the right side was very tortuous; it first ran outwards, between the third and fourth dorsal vertebræ, to the head of the fourth rib; it then ascended vertically to the head of the third, having just given off from its inner side a branch about the size of an ordinary radial, which ran upwards about the centre of the bodies of the three upper dorsal vertebræ, and anastomosed with a branch from the inferior thyroid of the subclavian. The artery turned outwards above the third rib, gave upwards a large branch, which anastomosed with the superior intercostal of the subclavian, and then divided into two branches—one continued its course between the second and third ribs; the other was double its size, and went through to the back. The second and fourth right aortic intercostals were large, and divided likewise into an anterior and posterior branch; the posterior branch in each case was much larger than the anterior. The third was of smaller size than the first, second, and fourth, and gave off a very small posterior branch, the greater part of the artery continuing its original course. The first aortic intercostal of the left side had its calibre somewhat less than that of the opposite side; it was very tortuous, and ascending to the interval between the second and third ribs, it gave off one branch (the size of a small radial), which ran behind the œsophagus, and anastomosed with a branch of the inferior thyroid; it then divided into an anterior and a posterior branch, the last of which formed the great bulk of the artery, the anterior not being much larger than an ordinary intercostal. The posterior branch of the second aortic intercostal of this side was likewise much the larger trunk. The other intercostal arteries of this side had their posterior branches much smaller than the anterior.

Branches of the Right Subclavian.—The internal mammary and transversalis colli arteries were very large, and had a diameter little less than an ordinary subclavian. The transversalis humeri was also large, and took its origin from the third part of the subclavian.

A. Transversalis Colli.—The posterior scapular branch took its ordinary course along the vertebral costa of the scapula; its principal branches were directed inwards; three or four large trunks anastomosing directly with the large posterior branches given off from the intercostal arteries.

B. Internal Mammary.—The branches given off from the outer side of this artery, and which ran along the three or four intercostal spaces, were large, and anastomosed directly with the anterior branches of the intercostal arteries. The

musculophrenic formed the anastomoses with the diaphragmatic arteries of the abdominal aorta.

C. *The Inferior Thyroid* was larger than usual; its glandular branches had about their normal calibre; a branch ran downwards and forwards to the oesophagus, and met an ascending branch given off from the first aortic intercostal.

D. *The Vertebral* was little more than of ordinary diameter.

E. *The superior Intercostal* was about the size of the internal mammary and transversalis colli arteries; it gave off a large deep cervical branch, and then continued its course tortuously to the first intercostal space, where a large posterior branch was given off.

On the left side the vessels were given off as on the right; but their calibre was much smaller. The subclavian on each side was reduced to at least half the diameter it had before the giving off of its trunks. The deep epigastric on each side was very large, having about the diameter of the corresponding internal mammary. Very free anastomoses were formed between it and the last-named artery.

Principal Communications by which the Circulation was carried on.—Internal mammary: with intercostal arteries, by means of musculo-phrenic and comes nervi phrenici, with the diaphragmatic or abdominal aorta; largely with the deep epigastric. Superior intercostal: anteriorly, with the first aortic intercostal; posteriorly, with the posterior branch of the first aortic intercostal. Inferior thyroid: a branch, about the size of an ordinary radial, formed a communication between this vessel and the first aortic intercostal. Transversalis colli formed very large communications with the posterior branches of the intercostals. The size of this artery, with its large anastomosing branches, first led me to look for some obstruction. The branches given to the side of the chest from the axillary were large, and anastomosed freely with the lateral branches of the intercostals.

Dr. W. OGLE exhibited an

ENLARGED BRONCHIAL GLAND,

removed from a child a year old. The gland was the size of an egg. The child had died suffering from all the symptoms of croup.

Dr. BENNET exhibited

TWO KIDNEYS IN VARIOUS STATES OF TUBERCULAR DEGENERATION.

The patient was a man, thirty-six years of age, who had been only a few days in the hospital. He had suffered from variola two years before, and had been out of health since that period. He had passed large quantities, and had incontinence of urine, and the usual symptoms of diabetes. There were no local symptoms except pain over the region of the bladder and loins. The urine was pale, and contained muco-purulent matter, but no sugar or albumen. He was comatose a few hours before death.

DISEASED AORTIC VALVES.

Dr. MARKHAM brought this specimen of diseased aortic valves before the Society because he thought that it illustrated one of the modes of origin of valvular diseases not frequently observed. The aortic valves are all incompetent. Two of them are partially destroyed by ulceration; and two are also fused and puckered at their adjoining angles, a calcareous nodule projecting from the upper surface of one of them. The aorta itself, and the lining membrane of the heart, and the other valves are perfectly sound. The hypertrophy of the left ventricle is evidently the consequence of the valvular disease. Thus the original disease is limited to the aortic valves; and it is clearly not of an atheromatous nature, as it had been considered during life. On more strict inquiry from the man's wife as to the history of his disease, it was found that he had been ailing for about ten years, and had suffered from scrofulous affection of the elbow-joint and the jaw, but never from any symptom of cardiac disease. He was withal a very active man, and an excellent runner. He was forty-four years old. Eight months before his death, he was suddenly seized with a violent pain in his left side, while running quickly on a message; he reached home with difficulty, and then the pain gradually subsided. From this moment his breath was never right. Dr. Markham saw him about five months after this, and then found clear signs of hypertrophy of the heart, and defective aortic valves. The patient suffered many angina-like attacks, and at length died under the usual symptoms of cardiac disease. Is it not fair to conclude that, in this case, the cardiac disease dates from the injury which the aortic valves are supposed to have received at the time, when the pain was felt in the side? His breath, always good before, was never right after that moment; he never had rheumatism or kidney disease; and the anatomical characters of the disease were clearly not of an atheromatous kind. Whether valves perfectly sound could undergo rupture or serious injury through inordinate action of the heart, may perhaps be doubted.

Dr. WATSON had seen six or eight cases in which the want of breath on exertion was dated from some violent exercise. He had not followed these cases to their termination, but he thought the symptoms were to be attributed to some strain upon the valves of the heart. Such cases were not rare, so far as their history was concerned, but the pathological appearances exhibited were not so well known.

Dr. SNOW BECK exhibited a specimen of an

OVARIAN CYST OF THE RIGHT OVARY.

A. B—, aged twenty-eight, was admitted into the Samaritan Hospital in January last, suffering from ovarian dropsy, which had been gradually developed during the last eighteen months, and was still increasing. She was in good health, suffered somewhat from dyspepsia, and was very

anxious to be relieved from the disease under which she suffered. On Jan. 19th, 1857, the cyst was tapped, and eleven pints and a half of opaque, light, olive-green-coloured fluid, of the consistence of quince-seed-water, evacuated. On standing, the fluid separated into two parts, the lower portion being chiefly composed of the usual corpuscles met with in ovarian cysts. A full-sized trocar was used in tapping the cyst, and when the contents were about half evacuated, an elastic male catheter was introduced well into the cyst, the canula withdrawn, the remainder of the fluid allowed to flow through the catheter, and the iodine injected through it. Three ounces of the tincture of iodine (Ph. Lond.), mixed with an equal quantity of water, was thrown in, allowed to remain there three minutes, and the principal part afterwards withdrawn. Considerable pain followed the injection of the iodine into the cyst, and much constitutional disturbance was induced, which subsided in eight days, so as to enable her to sit up. The cyst gradually refilled, and on March 2nd was again tapped, with the same precautions as before, and nine pints and a half of similar fluid evacuated. The strength of the injection was increased to two parts of tincture of iodine and one part of water, and again allowed to return, after remaining five minutes. Before the whole of the injection was thrown in, very great pain was complained of; the face became pale, a copious perspiration broke out, the pulse was scarcely perceptible at the wrist, and the patient declared she must faint from the severity of the pain. The constitutional symptoms were more marked than after the first injection of the cyst, and attended with some sickness; yet eight days afterwards the patient was enabled to leave her bed, and within a fortnight went into the country. On April 17th the cyst was tapped for the third time, with the same precautions as on the two former occasions, nine pints of a similar fluid removed, and five ounces of tincture of iodine (Ph. Lond.) thrown in and allowed to remain. Very great pain was induced by the injection of the iodine; the face became pale, the surface bathed in profuse perspiration as before, the pulse 104, scarcely perceptible. Some vomiting occurred, and in a few minutes she became insensible, in which state she was carried to bed. Her senses gradually returned, and during some hours, whilst she remained partially sensible, she made plaintive cries, as if suffering severe pain. During the night she was constantly sick, and complained of great pain in the abdomen. In the morning I found her perfectly sensible, lying on her back, the whole of the abdomen very tender, her movements expressive of great uneasiness, the breathing short and quick, the skin cold and blue, and the pulse not perceptible at the wrists. She died at a quarter past one P. M. On examination after death, the whole of the peritoneum was found inflamed. The injection was red and mottled at the lower part; the abdominal cavity filled with light-brown, transparent serum, which gave distinct evidence of the presence of iodine, and

old and fresh adhesions. The ovarian cyst which had been tapped lay in the right iliac region, collapsed, partially covered with the small intestines, presented no evidence of inflammation, and contained some reddish-coloured mucilaginous fluid, which also gave evidence of the presence of iodine. The walls of the cyst were thick, and the inner surface presented the red, florid, elevated patches, intermingled with others of a light yellow hue, and some of a calcareous consistence, which have been before met with in these diseases. The left ovary was also transformed into a cyst, the size of a large orange, and in every way similar to the larger cyst, and had been forced into the pelvis by the pressure of the larger cyst, and bound to its position by firm and old adhesions. The uterus was enlarged, and presented at the orifice the granular appearance of the mucous membrane so often described as ulceration. The hymen was intact.

Some discussion ensued as to whether the symptoms might not have arisen from simple inflammation of the ovary, quite unconnected with the escape of the iodine into the cavity of the peritoneum.

Mr. CALLANDER exhibited a case of

RUPTURE OF THE THORACIC AORTA,

which had terminated fatally, with nearly an entire absence of symptoms. The patient was a woman, who had strained herself by lifting a heavy weight, the only result of which was some pain in the neighbourhood of the dorsal vertebrae. She got apparently well, but on straining at stool was seized with symptoms of exhaustion, and died in a few minutes.

Dr. BARKER related a case of a seaman who had suffered for years with symptoms of heart-disease, resembling rather those of effusion into the pericardium than of hypertrophy. No impulse of the heart could be detected, and its sounds were nearly inaudible. After death, the heart was found very greatly hypertrophied, the walls of the left ventricle being nearly an inch in thickness. The muscular fibre was in every respect healthy.

Mr. THOS. SMITH exhibited a case of

COLLOID CANCER OF THE BREAST.

The tumour was removed from a woman sixty-three years of age, and had existed for eighteen months. There was little pain, and the nipple was not retracted. The section of the tumour, which was outside the gland, exhibited the ordinary appearances of colloid growth, though it was somewhat more vascular than usually obtained in that disease. He was inclined to the opinion, on reading a recent work of Rokitanaky, that its description perfectly agreed with that which he had given of medullary cancer.

Dr. ARMITAGE exhibited a specimen of great enlargement of the solitary glands of the ilium, removed from a patient who had died without any symptoms of typhoid fever.

Dr. OGIER WARD submitted, for the consideration of the Society as to its age,

AN ABORTED OVUM,

of which the following is the history:—The patient ceased to menstruate February 21st, and from her symptoms believed herself to be pregnant, having had four previous pregnancies. On April 23rd, she took a very long walk, and the next day she had a very violent flooding, which continued for three or four days, during which she remarked amongst the coagula what she thought was the "after-birth." The hæmorrhage then became irregular, and finally ceased about May 10th or 12th; and believing from her diminished size that she had aborted, she admitted her husband to her bed. On the 22nd of May she again took a long and rapid walk up a steep hill, which greatly fatigued her, and the next morning she passed, with scarcely any pain, a substance the size of a walnut, which was followed by occasional pains, and a flow of blood similar to after-pains, till the 27th, when the pains and discharge both ceased. The substance, when examined, had an oval form, with rather fimbriated ends, and, when laid open, exhibited the structure of an ovum, all the membranes being complete, but without an embryo. Externally, the decidua vera, with its cribriform perforations distinctly visible, extended over two-thirds of the body; beneath was the reflexa, attached to the vera firmly above, and extending beneath it below, to complete the figure. Under this again was the chorion, covered over its upper three-fourths with a layer of villi, easily separable, and also lined with a layer of villi exactly similar. Within the chorion again was a fourth membrane filled with an areolar tissue, containing a clot of blood in its meshes, but no trace of an embryo. The patient believes the ovum to be not older than a week or ten days; if so, the perfect structure of all the membranes and of the placental tufts displayed by the microscope is very striking. There is no difficulty to account for the absence of the embryo at such an early period. But if the ovum is one of two or three months, it ought to be many times its present size, and to contain an embryo. Besides that, it might reasonably have been expected to have been expelled a month previous, when the first hæmorrhage took place.

STRICTURE AND ULCERATION OF THE SIGMOID FLEXURE OF THE COLON.

The specimen was sent by G. B. Phillips, Esq., of Hales Owen. It was removed from a lady, aged thirty-five, the mother of twelve children, the youngest of whom is now seven months old. Two days after her last confinement, she had an attack of peritonitis, which yielded to ordinary treatment. For many years she had suffered from constipation, but no idea of any mechanical obstruction was entertained. On the 25th of March, Mr. Phillips was requested to see her. She had great pain of the abdomen and obstruction of the

bowels; for several days she vomited large quantities of feculent matter. The treatment adopted failing to afford relief, Amussat's operation was proposed and rejected, cancer of the colon being supposed to exist. Death took place on the 26th of April. A post-mortem examination revealed a close stricture of the sigmoid flexure of the colon; above the contracted part extensive ulceration existed. The whole of the bowels were greatly distended, and the mucous membrane highly congested. The peritoneum was healthy, as also were the liver, kidneys, and other organs of the abdomen and chest.

M. SQUIRE presented a specimen of

TRUE ANEURISM OF THE LEFT POSTERIOR CEREBRAL ARTERY.

The tumour was of considerable size, measuring four inches in circumference, and weighing half an ounce avoirdupoise; it proceeded from the vessel close to its junction with the basilar artery, and occupied the space in front of the pons Varolii and between the crura cerebri, pushing up the floor of the third ventricle, and encroaching on the left thalamus. The patient was a female, over forty years of age, having children (with whom she was found in an incapable state); she was under observation only a few hours before death, from adynamic fever or destitution; she was not comatose; there was no paralysis of sphincters of either of the extremities, or of the facial muscles; the senses of seeing and hearing existed, and the power of deglutition. Mr. Squire called attention to the absence of atheroma of the coats of the arteries, to the remarkable diminution in the size of the basilar artery, and to the free anastomosis existing, both the posterior and anterior communicating artery being accompanied by two and three parallel vessels (shown in the preparation), while other smaller ones were noticed in the dissection. The interior of the tumour was occupied by concentric layers of yellowish dense fibrin, the centre being a soft dark coagulum at the base of the tumour, extending three-quarters of an inch forwards from a minute cavity continuous with the vessel from which the tumour arose.

ENTOOZON IN THE LUNG OF A SNAKE.

In the absence of Dr. Quain, Dr. SIBBALD showed some specimens of the *Nematoideum Natrixis*, an entozoon, which he had found while assisting Dr. Quain in the dissection of the vascular system of the common coluber. The specimens were females, with the oviducts full of ova in different stages of development. The works of helminthologists not having any complete account of the species, Dr. Sibbald had thought it might be interesting to exhibit these entozoa to the Society. Dr. Sibbald also showed some drawings illustrative of their mode of development, and referred to the resemblance which some of the young states bore to the *Trichina spiralis*, found in human muscle.

MALFORMATION OF THE HEART, WITH ABNORMAL DISTRIBUTION OF AORTIC BRANCHES TO THE LUNGS.

This specimen, which was also exhibited by Dr. SIBBALD, was taken from a child who had been a patient of Dr. Scott Alison, at the Brompton Hospital. The child, who appeared to be healthy at the time of birth, had become emaciated, and died with symptoms of pneumonia, at the age of ten months. The cardiac signs before death were, a loud systolic bruit at the base, and a very distinct thrilling pulsation felt in the supra-sternal notch. The heart is about the size of a large plum, divided into equal parts by the septum ventriculorum, and more egg-shaped than cordate in form. The auricles are normal in size and form. The right ventricle is of full size, and its parietes are about a quarter of an inch in thickness; from it the aorta arises. The left ventricle is about the same size, and its walls are very slightly thicker than those of the left; no vessel arises from it. The septum between the two is incomplete at the upper part, leaving a space through which a large goose-quill may be passed. The auriculo-ventricular valves are normal. Owing to the opening in the septum, both ventricles communicate with the aorta, and as the pulmonary artery is so much narrowed as to have become practically obliterated at its origin, both ventricles must have poured all their blood into the aorta. The aortic valves are two in number, right and left, covering their respective ventricles. Between the heart and the origin of the innominate the aorta is much dilated, so that its diameter is about twice the normal standard. At the origin of the innominate, the aorta assumes its usual size, which it preserves through the rest of its course. It then gives off three branches on each side to the lungs. The middle one at the left side communicates with the real pulmonary artery, which latter sends, as normally it ought, a division to each lung, receiving its blood from the communicating branch just mentioned.

Mr. BRYANT showed the following specimens :

I. MYELOID TUMOUR OF THE CONDYLES OF THE FEMUR.

Joseph S——, aged fifteen, a gas-fitter, residing at Wandsworth, was admitted into Guy's Hospital, under Mr. Hilton, on the 8th of April. He had always enjoyed good health till the end of December last, when, without any known cause, his left knee began to swell, but unattended with pain. The enlargement gradually increased, and stiffness of the joint appeared, with some degree of pain on pressure. He continued, however, at his work till three weeks previously, when, by medical advice, he rested, applied blisters, and took cod-liver oil. The growth then became stationary, and he applied for admission into Guy's Hospital. When admitted, he presented a delicate aspect, but his body was well nourished. In the situation of the condyles of the femur, and extending upwards, there was a swelling of a firm, even, and

tense character, which apparently consisted of dilated bone. The skin was free, and not discoloured; but considerable pain was experienced when pressure was applied. The joint was easily movable, and was evidently unaffected. A few days after admission the growth was punctured with a trochar and canula, but blood only escaped. On April 28th the thigh was amputated above its middle. On examining the growth, its character became apparent. It had evidently commenced in the lower part of the shaft of the femur, which it had expanded, some part of the shaft of bone being now visible; it had encroached partially upon the epiphysis, which was slightly diseased at the line of junction. Some new bone was also visible at the part where it was connected with the shaft. To the eye the tumour presented the usual features of that recently-recognised growth, the myeloid tumour. It was, perhaps, unusually vascular, being nearly filled with blood. Microscopically, also, it exhibited the large, many nucleated cells described as characteristic of the myeloid growth.

II. PENDULOUS FIBRO-NUCLEATED TUMOUR DEVELOPED IN THE SKIN OF THE ABDOMEN.

Jane R——, aged thirty, a married woman, residing in Bermondsey, was admitted into Guy's Hospital on April 22nd, under the care of Mr. Cock. Three months previously she received a blow upon the right side of the umbilicus. A few days afterwards she discovered a tumour in this position, about the size of a walnut; this gradually enlarging, she went to Guy's. On admission, she presented a healthy appearance, and in the right abdominal walls was a tumour the size of a fist, easily movable, and raised from the muscles; its surface presented a congested appearance, and to the hand it gave a firm and fibrous feel. On May 5th it was excised, and microscopically was found to be composed of little else than nuclei, with some delicate fibre tissue, evidently belonging to that rare class of tumours called fibro-nucleated.

Mr. ARTHUR JOHNSON exhibited the

SACRUM OF A CHILD, CONTAINING A FATTY TUMOUR CONNECTED WITH THE INTERIOR OF THE SPINAL CANAL.

This specimen afforded a sequel to the case brought before the Society in February, being taken from the same patient. Mr. Johnson at that time showed a fatty tumour which he had removed from the region of the sacrum, and which, he stated, passed deeply into the sacral canal, and was adherent to the membranes of the cord from which it was dissected. The child recovered from the operation, and was taken home, the wound having healed, and the symptoms of nervous irritation disappeared. The little patient continued well for six weeks, and was even able to stand, and was beginning to walk a little, when it was attacked with acute peritonitis, affecting principally the region of the liver, and died in

a couple of days. Mr. Johnson having been informed of the death, had an opportunity of examining the body, and removed the whole of the sacrum, which he exhibited. The cicatrix was adherent to the membranes of the spinal cord, which were somewhat protruded through an opening in the back part of the sacral canal, extending downwards from the level of the inferior margin of the sacro-iliac synchondrosis, below which point the laminae were almost entirely deficient. On opening the membranes, the protrusion was found to be caused by a large fatty mass adherent to these membranes below, but free above, where it formed, inside the theca, a smooth conical circumscribed tumour, resembling the end of a finger, situated behind, and pressing upon, the spinal cord, and separating it, as it were, from the back part of the theca, so as to leave a considerable space above it occupied by the cerebro-spinal fluid. There was no inflammation whatever about the cord or its membranes, throughout the whole extent.

Dr. Vandyke Carter, who was kind enough to examine the specimen, gives the following more minute description of it:—"I find the greater part of the fatty mass placed within the dura mater, which is stretched over it, and has become much thinned. The tumour has pressed upon the spinal cord (found in this part of the vertebral canal at this early age), and has involved the roots of origin of the lowest spinal nerves so completely, that they seem to be imbedded in its substance. The direction of pressure, as well as of growth, seems to have been from below upwards and from behind forwards. It may be conjectured that the tumour commenced quite at the extremity of the vertebral canal; it may be, being connected with the bodies of the lowest sacral or coccygeal vertebrae, and that it found an easy entrance into the canal through its here unclosed termination. Growth probably took place outwards at the same time, forming the external tumour, and a distinct lobule may be seen placed between the dura mater and periosteum of the sacral canal." (This extends up the canal for about an inch, making its way to the right side, and rather *in front* of the sheath, its base being attached to the main tumour and to the membranes, the apex being free and rounded.) "The situation of the main part of the tumour easily accounts for the phenomena observed during the preceding operation. Connected, no doubt, with the presence of this tumour may be seen a malformation of the lower sacral vertebrae. From the body of the third downwards they are displaced to the left side, and small in size, the deficient space being filled up with strong fibrous tissue. This deficiency corresponds with the front part of the arch of these vertebrae. The whole deformity may be considered as the result of pressure, and consequent non-development of certain parts. The coccyx resumes its normal position."

PERICARDITIS AND EXTENSIVE EFFUSION OF PUS INTO THE PERICARDIUM, IN AN INFANT AGED FIVE MONTHS.

DR. HAWKSLEY exhibited the thoracic organs of an infant, aged five months. The subject of the disease, a somewhat delicate but healthy child, had been ill a fortnight only previous to its death. For the first week the symptoms were those of remittent fever, then of a state of depressed vital powers, accompanied by a slight lichenous eruption on the skin and by an aphthous condition of the mouth. During the last twenty-four hours extensive patches of purpura appeared on the legs and body. The only general symptoms that might have led to the discovery of the mischief taking place within the pericardium of a child so young were the following:—The mother noticed, at one period within the first few days of the commencement of the illness, that the child could not be laid on the left side without giving rise to signs of great restlessness and pain; subsequently the same thing occurred to the right side. The position of greatest quietude and repose was the dorsal, and with the trunk on a horizontal level. It was found also that any attempt to lift the child up and bend its body forward gave great pain; the child spontaneously kept its spine arched rather backward. There was also, for the last few days of its life, great hoarseness, from the pressure, doubtless, of the distended pericardium on the trachea. Another remarkable sign was extreme sleeplessness, and throwing about of the arms and hands. At the post-mortem examination, the pericardium was found adherent to the sternum, and extraordinarily distended by fluid, so that the tumour formed had flattened the left lung against the spine, and had compressed the trachea. On opening the pericardium, it was found to contain at least three ounces of what appeared pure pus. The visceral serous layer was found covered by firmly-adherent villi of soft fibrin, particularly that part covering the origins of the great vessels, while the parietal layer possessed its usual polish and smoothness. There was no endocarditis, nor could signs of any other disease or deposit be found in the body, except a very slight point of puriform matter just beneath the capsule in the upper end of the right kidney. The matter found within the pericardium was of the consistence of thick, yellow cream, and under the microscope it was found to consist of the ordinary pus-globules, with large compound cells, fat globules, and a molecular base.

Mr. BIRKETT exhibited the

HEAD OF A TIBIA INFILTRATED BY CARCINOMA,

and an account of the disease in which he had amputated through the thigh that morning. The disease had been growing very nearly one year in a comparatively healthy woman, thirty-two years old. It commenced with intense pain in the head of the tibia during the third month of utero-gestation, increased slowly during three months, but

during the last three months of pregnancy it did not grow. It has increased rapidly since parturition in November, 1856. Various means were employed to disperse the swelling and to relieve pain, but both designs were frustrated. A puncture was made with trocar and canula, but blood only came away. The entire head of the tibia was converted into dense, firm, fibrous carcinoma, which grew out from the internal tuberosity, and then formed an independent out-growth beneath the tendinous expansions of the ligamenta patellæ and internal flexor muscles. The outline of the bone was perfect, but the cancellous tissue was entirely destroyed. The new growth extended to the osseous articular lamina, which supports the articular cartilage, and both these structures were healthy.

Dr. WILKS presented

A PUERPERAL OSTEOPHYTE IN THE CALVARIA.

The specimen exhibited appeared to afford an example of the condition of the skull mentioned by Rokitsansky as occurring in pregnant women; that pathologist having stated that the inner surface of the bones of the head become covered with a new layer of osseous tissue in every successive pregnancy, and that the deposit is found in the form of delicate laminæ along the course of the longitudinal sinus, the sutures, and occasionally as distinct patches, on the base of the cranium. The present specimen came from a woman, twenty-one years of age, who died at the sixth month of gestation; and, upon examining the calvaria, a new distinct layer of bone was found occupying each side of the longitudinal sinus, and also in the course of the furrows for the meningeal arteries. The surface was smooth and white, and when carefully examined, was evidently composed of a new osseous growth. It so far confirmed the observations of Rokitsansky; but Dr. Wilks stated that such new deposits of bone were so common that he felt considerable scepticism on the subject. The statement of the German pathologist had, however, never been disproved; and, therefore, he was anxious to know if any member had investigated it.

Dr. OGLE presented a specimen of

ANEURISM OF THE SUPERIOR MESENTERIC ARTERY, BURSTING INTO THE PERITONEAL CAVITY.

The aneurism was of the size of a large filbert, and was situated about two inches from the tube of the intestine, being connected with a branch of the artery at about the distance of two feet from the duodenum. The aneurism had given way at the posterior part of the mesentery, and blood was extravasated between the folds of the peritoneum forming the mesentery in the neighbourhood to a slight extent. A considerable amount of blood had escaped into the general abdominal cavity, and was found in thick, coagulated layers over the various coils of intestine. The specimen was from the body of a young woman who was brought into St. George's Hospital with cough and expectorating bloody mucus, and with diarrhoea. Other

symptoms in addition led to the supposition that she was phthisical. On the day following admission, she complained of pain at the lower part of the abdomen, and in a few hours later she died. Shreddy particles of fibrin were found adherent to the surfaces of the aortic and mitral valve flaps, but no decided disease of the thoracic organs was otherwise found.

Dr. OGLE also exhibited, for Mr. HUSSEY, of Oxford, a specimen of

ANCHYLOSIS OF THE OCCIPUT AND OF THE FIRST CERVICAL VERTEBRÆ, AND OF THE SECOND, THIRD, AND FOURTH CERVICAL VERTEBRÆ; CONTRACTION OF THE MUSCLES OF THE EXTREMITIES.

The first cervical vertebra was most completely welded to the occiput, showing new bone found in connexion with its surfaces, specially with the inferior articulating process on the right side. The odontoid process was very much thickened, and when recent had a quantity of soft, crumbly, new bony particles attached to its extremity. There was no union between the first and second cervical vertebrae, the motion between which having been complete during life. The other cervical vertebrae were united to each other firmly by new bone, formerly a kind of bony cylinder. By means of the curvature allowed, caused by the absorption of bone at this part of the column, and owing to the great enlargement of the odontoid process, the passage for the upper part of the spinal cord was reduced to about one-third the size which it ought to have been. The specimen was from the body of an insane man, aged seventy-three, who had, it was said, from birth been affected by contraction of the muscles of the upper and lower limbs, chiefly the latter, having talipes varus of both feet. He had had no fits. He died of fever.

EPIDEMIOLOGICAL SOCIETY.

MONDAY, JULY 6TH, 1857.

DR. SNOW IN THE CHAIR.

Dr. F. C. WEBB read a paper

ON THE HISTORY OF GAOL FEVER IN ENGLAND.

The paper was introduced by some remarks on the impossibility of any class of society being subjected for a length of time to the causes of disease without final participation by the rest of the community in the results. The testimony of Lord Bacon was adduced to the frequent occurrence of disease taking its origin amongst prisoners "long and close and nastily kept;" that such occurrences were not limited to his age is abundantly proved by extracts from the writings of Howard and Neild, illustrative of the state of prisons in the eighteenth and early part of the nineteenth centuries, and of the etiology of gaol fever. The appreciable causes which produced the disease were, the crowding of human beings

in small dungeons, the withdrawal of a proper supply of air and water, the want of nourishment and exercise, inadequate clothing, the filth resulting from the absence of sewerage and necessaries, the operation of a sanguinary and ill-regulated penal code, and consequent mental depression. Reference was then made to various acts of legislation on the subject of gaol distemper. The first outbreak of gaol disease of which we have an account was in 1414, when the prisons of Newgate and Ludgate were severely visited. In 1522, an outbreak took place at the sessions held in the castle of Cambridge. This was followed, in 1577, by the celebrated "black assize" at Oxford, when 510 persons were infected and died from the 6th of July to the 10th of August. A description of the symptoms of the disease was given from the accounts of Cogan and Stow. Until a late period, the gaol distemper was popularly believed to affect men alone. That this, in the eighteenth century, was not founded on fact, was proved by the testimony of Pringle and Lettson. The "sickness of the house" in the Queen's Bench prison, in 1579, was made the occasion of a petition to Queen Elizabeth. A similar outbreak to that of Oxford took place at Exeter in 1585. A scantiness of detail as to disease in prisons in the seventeenth century was accounted for by the difficulty of separating the prison element from the general sum of causes producing the pestilential fever so frequently rife during the civil wars; by the succession of epidemics of plague, and frequency with which petechial fever was confounded with that disease; by the political excitement of the time, which probably interfered with the careful chronicling of such events. Gaol fever was found to prevail, in the eighteenth century, whenever from any cause the gaols became crowded, as in 1730, from the unparalleled amount of crime in 1740, on the conclusion of the peace of Aix-la Chapelle; and under similar circumstances in 1783. Allusions were made to the outbreak at Taunton and Exeter, in 1730; the state of the Irish prisons in 1740-41; the disease in the gaols of Limerick and Tralee. The distemper was conveyed by some deserters who had been confined in prisons to the Duke of Cumberland's army at Inverness, in 1746. The author then gave Pringle's account of the epidemic. An outbreak occurred at the Old Bailey sessions in 1750, when, curiously enough, those to the right of the Lord Mayor generally escaped, the reason assigned being, that a stream of air from the window directed the *materies morbi* to the other side of the court. A great benefit resulted from a ventilator constructed at Newgate, and worked by a machine in the manner of a windmill. Seven of eleven workmen employed in erecting this ventilator contracted the fever, and by one of them a whole family was infected. Notice was then made of its conveyance from Exeter gaol to the town of Axminster in 1750. It prevailed in 1761 amongst the prisoners of war at Porchester and Winchester; at Warwick and Bedford in 1772,

spreading, in the latter instance, to the town. Dr. Lettson describes an outbreak in Long-lane, Aldersgate-street, the fever being brought there by a person who had contracted it in Newgate. Outbreaks occurred in Aylesbury gaol in 1773-74, at Dublin, in 1775, at Hertford in 1776. It subsided in the borough and county gaols until 1788, when, part of the forces being disbanded, the gaols were again crowded, and fever re-appeared. At Worcester, it appeared in a malignant form, and was thence conveyed to Droitwich. The author proceeded to give Pringle's and Lind's testimony as to the influence of prisons as sources of infection to the navy and army. The disease was also carried to the penal settlements in America. Dr. Webb stated his opinion of the nature of the true gaol distemper. It was typhus fever in its most characteristic form, identical with hospital and ship fever and the pestilential fever of Sydenham. When suddenly fatal, which it frequently was, it corresponded with the "typhus siderans" of authors. Great light has been thrown by the subject on the etiology of typhus fever—it has entirely disappeared as a gaol disease. The author concluded the paper by a few remarks on the encouragement afforded by such a retrospect to philanthropists and promoters of sanitary reform.

A discussion followed, in which Dr. Seaton, Mr. Lord, Dr. Camps, Dr. Richardson, Mr. Hunt, Dr. Snow, and Dr. McWilliam took part.

MEDICAL SOCIETY OF LONDON.

MR. HYED, PRESIDENT, IN THE CHAIR.

MR. PRICE exhibited a specimen of

EXTENSIVE DISEASE OF THE HIP-JOINT.

A child, eleven years of age, had been sent to Margate two or three years ago with incipient disease of the right hip-joint. Sea bathing and generous diet, however, appeared to arrest the further progress of the affection, and the little patient enjoyed an apparent immunity from the disease for some time. After the lapse of a few months, unfortunately, the previous symptoms again returned, and from that time up to the date of her death she was kept a close prisoner to her bed. An examination of the joint discovered complete destruction of the cartilage of the head of the femur, with extensive ulceration of the bone. The cotyloid cavity was likewise bared of its cartilaginous covering, and, in parts, the bony structure was also implicated. The synovial membrane had, in a great measure, disappeared, and what remained was of a thickened character, but still retained its smooth and glistening appearance. The head of the bone was connected to its cavity by strings of lymph. The ligamentum teres had quite disappeared. Two openings communicated with the interior of the articulation: one caused by the perforation of the bony parts forming the upper boundary of the cavity; and the other by

ulceration of the capsule, which allowed the exit of a thin, unhealthy discharge into a long sinuous canal, which opened externally on to the outer surface of the thigh. There were two points of interest connected with the specimen. Notwithstanding the extensive destruction of cartilage, bone, and other tissues, the little patient did not appear to suffer any great degree of pain; in fact, so little disturbance was caused, that the extent of mischief done to the articulation was not accurately determined during life. This was by no means an uncommon occurrence with strumous children who are the subjects of extensive hip-joint disease; and, in this special instance, death was due to extreme marasmus, and not to the irritation caused by this disease. Although the articulation was so far destroyed, there was no disposition for the head of the bone to become dislocated. Partial or complete luxation of the bone from the cavity would appear to be of less frequent occurrence than is generally supposed. From a large number of cases which had fallen under his, Mr. Price's, observation, such a termination had but occasionally been noticed.

Mr. PRICE also related a case of

DISLOCATION OF THE HEAD OF THE FEMUR INTO THE THYROID FORAMEN

which had within the last few days fallen under his notice. The patient was a child six years of age, and some nine weeks ago had met with a fall which caused the accident. The symptoms were well marked. Mr. Price had reduced the dislocation five weeks after the accident, but by some untoward circumstance the head of the bone had again slipped from its cavity, and remained dislocated for between three and four weeks. By means of traction by the pulleys, and suitable rotary movements, the child being placed under the influence of chloroform, the adhesions were broken down, and the head of the bone again placed in its cavity. A long splint, extending into the axilla, was placed on the outside of the limb, and a bandage applied to prevent the possibility of the bone again becoming displaced.

Dr. SEPTIMUS GIBBON exhibited a small

ADENOCELE TUMOUR

that had been brought to him for examination. It had been removed from the upper margin of the left mammary gland of an unmarried woman, aged twenty-five, whose health was good and whose uterine functions were regular. So little pain or inconvenience did she experience from this tumour, that she would not have been conscious of its existence had she not felt it, five months ago, when casually passing her hand over the breast. The tumour consisted of two lobes of hypertrophied lung substance, each about the size of an ordinary nut. On section, they had the appearance of being encysted, and presented a minutely granular and a glistening, semi-transparent surface, of a dirty pinkish colour.

Dr. Gibbon presented a sketch of the micro-

scopical appearances, magnified 250 diameters, showing the structure and caecal terminations of the ducts, containing epithelium with here and there yellow and brown pigmentary deposit, and the fibro-cellular tissue surrounding the tumours. He expressed an opinion that this tumour, which had been excised to allay the fears of the patient, would probably return. It was a question whether it was advisable in *all* cases to remove growths of this character. He narrated a case which had long been under his own observation, in which a married lady, aged thirty-seven, who had never borne children, had had a small tumour, probably of this character, in each breast, for twenty years. At every catamenial period they enlarged and were excessively tender and painful. An eminent surgeon advised the removal of these tumours sixteen years ago; but as he expressed an opinion as to their innocent nature, the lady did not feel disposed to undergo the operation.

Dr. ROGERS exhibited a

LARGE TUMOUR OF THE LEFT OVARY,

partly solid, partly liquid; also a thickened mass of mesentery and bowel, taken from an old woman aged eighty-five, which had caused death by strangulation. There had been extensive dropsy of the abdomen existing for some months previously. The ovarian cyst had at one time been felt in the right iliac and lumbar regions; but on post-mortem examination it was found impacted between the uterus and rectum, the action of which bowel was thus arrested. Sickness came on, and death rapidly followed. On a careful microscopic examination of the masses of thickened mesentery and ovarian cyst, nothing malignant was discovered.

WESTERN MEDICAL AND SURGICAL SOCIETY.

MR. LANE, PRESIDENT, IN THE CHAIR.

Mr. MILTON read a paper

ON THE TREATMENT OF COMPLICATED GONORRHOEA.

The author divided his paper into three heads.

I. A brief review of the treatment best adapted for simple Gonorrhœa, and those complications which do not delay its cure, such as chordee, painful erections, irritable bladder, and swelled testicle.

II. A brief enumeration of those symptoms which really complicate gonorrhœa, and interfere with the exhibition of remedies.

III. The treatment of these. They are,—

1. Excessive tendency to faint, so marked as to constitute quite an idiosyncrasy, the mere insertion of the tip of the syringe producing immediate syncope. Contrary to what might be expected, this symptom often showed itself in persons who rather prided themselves on their physical development. It did not necessarily interfere with the use of injections, which could easily be given, with the patient in a sitting posture.

2. Great natural or induced weakness, the former being attended with sickness and headache, utter disgust for all medicines, languor, and costiveness; a very similar state, but accompanied rather by wasting turpidity of the urine, eructations, &c., was sometimes induced by the prolonged use of copaiba. Both forms were best tested with active purgatives and quinine, injections being continued as usual. A moderately tonic diet, with a little wine, generally agreed with these patients.

3. Tendency to inflammation of the lacunæ of the urethra; excessive sensibility of this canal, and strong disposition to stricture. Inflammation of the lacuna rarely ensued if the case was treated with the acetate of potass; but if it had occurred before the surgeon was consulted, it was to be treated with a blister, frictions with blue ointment, saline aperients, and blue pill for the first few days, and the subsequent use of quinine or liquor potassæ in some bitter infusion, as cascarrilla or serpentary. This treatment had succeeded with patients who had always suffered severely from this complication in previous gonorrhœa. Excessive tenderness of the urethra was generally soon overcome if the injections were given very weak the first day or two: they might even consist solely of warm water till the potass had begun to act, and a sedative might be given every night. Strong tendency to stricture—i. e., when the canal began to contract within a week or two from commencing the treatment—had only occurred in three patients treated with potass, one of whom did his best to aid it by high living; in five cases it appeared to have followed the use of injections of chloride of zinc. Nitrate of silver, applied with Mr. Milton's armed bougie, was generally effective.

4. Excessive irritability of the bladder or rectum. The first of these, generally dependent on extension of this disorder to the cavity of the viscus, required sedatives, tonics, and brisk purgatives. To remove the discharge, the author advised injections, with the long syringe exhibited. The similar affection of the rectum was sometimes removed by using a strip of calico soaked in solution of nitrate of silver, as the irregular distension of the urethra by fluid seemed to bring the irritability on.

5. Perinæal abscess. An obstinate complication, which antiphlogistic treatment often failed to subdue. Stricture, and a very irregular form of the canal had, in two instances, ensued. The treatment should be energetic, and not relaxed till the swelling was absorbed. Antimony in large doses, iodide of potass, and blisters, &c.

6. Inflammation of the prostate required to be treated in the same way as perinæal abscess. Leeches, however, were occasionally useful. In both cases injections might be continued.

7. Rheumatism and ophthalmia. The most formidable of all its complications. Mr. Milton objected to this being called a constitutional effect of gonorrhœa. The animal life might sympathize with the affection of the generative organs; it might participate in the disease. The structures of or-

ganic life (the constitution) neither sympathized with, nor participated in, the disorder. He recommended the treatment of Mr. Lawrence—unsparing use of purgatives and colchicum, followed by the iodide of potassium.

A Mirror

OF THE PRACTICE OF MEDICINE AND SURGERY IN THE HOSPITALS OF LONDON.

Nulla est alia pro certo noscendi via, nisi quam plurimas et morborum et dissectionum historias, tam aliorum proprias, collectas habere et enter se comparare.—MORAGNI. *De Sed. et Caus. Morb.* lib. 14. *Premium.*

JULY—AUGUST.

ST. BARTHOLOMEW'S HOSPITAL.

Dislocation of the Fourth Cervical Vertebra, and Partial Fracture; Death Two Days and a Half Afterwards.

(Under the care of Mr. LLOYD.)

IN considering the injuries to the spine, it is well known that dislocation of any of the five lower cervical vertebræ is of more frequent occurrence than of the two upper. The dislocation of the atlas from the occiput has been described only in two instances; whilst, again, dislocations of the axis are much more common, and are familiar to us in hanging and similar accidents. When dislocation of any of the five lower cervical vertebræ occurs, it is generally associated with fracture, although rarely it may happen without it. The subjoined case, the notes of which were kindly furnished us by Mr. W. J. Daniel, house-surgeon to the hospital, is one in which the fourth cervical was dislocated forwards from the fifth to the extent of a quarter of an inch, which, although it may seem to be of small extent, is in reality sufficient to cause mischief of so serious a character to the spinal cord as to prove fatal. The edge of the articulating surface of the fourth, and the transverse process of the fifth vertebræ, were, as might be anticipated, fractured. The spinal cord was so much injured as to produce death two days and a half after the accident, which was an unusual and singular one—falling on the back of the neck on a lower step. This produced immediate paralysis, and some concussion of the brain as well. This displacement was of sufficient extent to produce complete paralysis of the upper and lower extremities; the breathing was difficult and diaphragmatic, owing to palsy of the intercostal and abdominal muscles. This finally increased, and put an end to life. If the injury in these cases be above the origin of the phrenic nerve, the diaphragm becomes palsied, and death instantaneous. Here the injury was just below the origin of that nerve, but sufficiently close to injure some of its filaments of origin, and gradually produce that result. Our wonder is that the patient survived as long as he did.

Patrick D—, a strongly-built, heavy man, aged thirty-six, was brought to the hospital on May 20th, suffering from paralysis consequent on an injury to his spine, and admitted into Colston ward. It appears that on the 18th of May he was descending some stairs, and on getting to the third or fourth from the bottom, he slipped up on some orange-peel, and fell, the back of his neck coming in contact with the last step. His friends stated that the paralysis was the immediate effect of the accident; that he was stunned for a time, but soon recovered his consciousness; that he then remained sensible for about six hours, after which "raving delirium" came on; this lasted only through the night, and from that time till his admission here he was quite conscious. When brought to the hospital, there was loss of motion and sensation in both upper and lower extremities; retention of urine; pulse 84, and full; tongue furred; skin natural; breathing chiefly diaphragmatic; countenance slightly livid. He can swallow and talk, though with some difficulty; his head appears quite clear. About two pints of offensive dark-coloured urine were drawn off, and he was left as quiet as possible.—Eight p. m.: Difficulty in breathing more marked; he has been sleeping a little; urine again drawn off.

May 21st.—Half-past twelve a. m.: Dyspnoea not increased; the face flushed; pulse 96, very full and bounding; the skin dry and burning hot; eyes suffused. He now wanders a little; states that he is in no pain. For the next two hours he remained in about the same state; but after that time respiration became more and more difficult, and instead of the hot, dry skin, he now perspires profusely. He died at about a quarter to four this morning.

A *post-mortem examination* was obtained. The fourth cervical vertebra was dislocated forwards from the fifth to the extent of about a quarter of an inch. A piece of the posterior edge of the lower articulating surface of the fourth was broken off; and there was also fracture of the anterior portion of the transverse process of the fifth. The spinal cord opposite the seat of injury was very much softened, to the extent of more than an inch, forming quite a contrast to the rest of the cord, which was firm and healthy.

KING'S COLLEGE HOSPITAL.

Myeloid Tumour of the Lower Jaw in a Girl, supervening upon a Growth removed Four Years before; Removal a second time: Fatal Result from Exhaustion.

(Under the care of Mr. FERGUSON.)

THE description given of the tumour in the following case shows it to have been myeloid in character, and to have recurred shortly after the removal of another tumour by Mr. Pettigrew some years before. It had now attained to a considerable size; was not painful but produced great deformity and inconvenience to the poor girl, who was anxious that something should be done to obtain relief. It was removed by Mr. Fergusson, when the pa-

tient was completely under the influence of chloroform, the operation being associated with very free hæmorrhage. We regret to state, however, that owing to the shock and the exhaustion consequent upon the formidable nature of the operation itself, she died the following day—a circumstance the more to be regretted, because the tumour was found not to be malignant.

In a previous "Mirror" we gave the leading characteristics of myeloid disease, in recording a case under Mr. Hilton's care, at Guy's Hospital. In all the instances that have been recorded by Mr. Henry Grey, Mr. Paget, Lebert, and others, we believe recurrence of the disease, so far as could be ascertained, was unknown. We cannot assume that in this girl the disease was recurrent, unless we know for certain what were the true characters of the first tumour removed, and thus one of the most important features of the case is left doubtful. This is, moreover, one of the first cases recorded of myeloid disease of the jaw, and thus differs from other instances of the disease elsewhere in not being developed in an epiphysal extremity of a bone.

As Mr. Fergusson attaches considerable importance to preserving the integrity of the mouth, his incisions were so made, as described in the details of the case, as not only to avoid deformity, but to leave the lips intact, and when the edges of the wound were brought together, no deformity was visible.

We are indebted to Mr. Christopher Heath, house-surgeon to the hospital, for the following abstract of the case:—

Mary Ann H—, aged twenty-three, admitted on the 29th of April, with a large tumour involving the right side of the lower jaw. The tumour forms a projection of considerable size under the cheek, extending as high as the malar bone; it presents a uniformly smooth surface, and is very hard to the touch. On the inside of the mouth, the alveolar border is considerably projected towards the median line as far forwards as the canine tooth, the bicuspid and first molar teeth being thrown inwards, and the other molars wanting. There is no pain nor tenderness on pressure. About six years ago, a tumour formed about the wisdom tooth, which increased until it involved the angle of the jaw, and was then removed by Mr. Pettigrew. This tumour had caused her great pain by pressing against the teeth of the upper jaw; but the present tumour (which began to form soon after Mr. Pettigrew's operation) has not been so painful, but it is a great source of inconvenience and disfigurement.

On the 2nd of May, chloroform having been administered, Mr. Fergusson made an incision through the lower part of the lower lip, (not dividing the red margin,) and continued it for about two inches along the base of the jaw; two bicuspid teeth having then been drawn, and the edges of the wound held asunder, a small saw was used, and the jaw cut through at the canine tooth. There was some hæmorrhage from the facial and inferior dental arteries, which was arrested as far

as possible by the fingers of the assistants. The incision was now carried along the base and ramus of the jaw, nearly up to the ear, and the integuments being rapidly dissected off the tumour, Mr. Fergusson grasped the cut extremity of the bone, and proceeded to dislocate the tumour, running the knife behind it to divide its internal attachment. By this means, the whole of the disease was brought away, but the ramus of the jaw giving way just above the tumour, (probably where it had been cut in the former operation,) the condyle was left *in situ* for the moment. Mr. Fergusson having first secured some of the bleeding vessels, from which (particularly the internal maxillary artery), the bleeding was very considerable, proceeded to remove the remaining portion of bone by grasping it with the "lion forceps," and thus with a few touches of the knife dislocating and bringing it away. The remaining bleeding vessels were now secured, and the edges of the wound brought together with sutures, and covered with water-dressing. The patient was removed to bed, and no hæmorrhage of any moment occurred, although there was an oozing of blood for some hours after the operation. She was a good deal reduced by the loss of blood, and vomited frequently, but by the administration of ice and wine she improved, and passed a tolerable night, though still troubled with sickness.

May 3rd.—A pill containing creasote was administered, which checked the vomiting, and she was able to take a little nourishment, the pulse became fuller, and her condition appeared satisfactory. Toward evening, however, notwithstanding the regular administration of wine, beef-tea, &c., she became weaker, the pulse more rapid and feeble, and she sank gradually, and died at ten P.M.

After the operation, she was unable to close the right eye, and the face was drawn to the left, owing to the division of the facial nerve. The wound was opened up after death, and it was evident that there had been no sudden hæmorrhage after the operation to account for death, which must be put down to the shock and exhaustion from the operation.

The following is a description of the tumour, which proved to be myeloid:—It has been developed within the bone, which it has expanded into a thin envelope of compact bony tissue clothing its exterior. A section showed a surface of a clear white colour, bathed with clear serum (not milky when scraped), of considerable firmness, and presenting numerous osteoid deposits.—*Minute structure*: Is neither fibrous nor enchondromatous, as most of the tumours in the lower jaw appear to be. It is almost wholly built up of small cells, whose prevalent form is oval, either free in a dimly granular matrix, or here and there contained in large parent cells, resembling those of fetal marrow. Very delicate fibres occur sparingly.

WESTMINSTER HOSPITAL.

Fracture of the Base of the Skull, involving the Orbital Nerves and Portio Dura; Death on the seventh day; Autopsy.

(Under the care of Mr. HOLTHOUSE.)

WHEN the patient was admitted, Mr. Holthouse expressed his opinion that there was fracture of the base of the skull, from the circumstance of blood flowing from the ear, taken together with the violence of the blow, and the nature of the accident; and, on the 22nd of April, he diagnosed fracture through the petrous portion of the temporal bone, and through the middle fossa of the base of the skull, involving the orbital nerves and the portio dura, from the symptoms which were then present. The case, of course, terminated unfavourably; and, after death, most extensive injuries were found to have been sustained, involving the parts named.

There are several features of interest in this case especially worthy of notice on the part of the student. Now the first of these is the hæmorrhage of the left ear. When this is present, and the surgeon is aware of the nature of the accident, it is important if considerable and continuous, but not so if slight, as it may then arise from rupture of the tympanum. In this boy it was slight, and depended upon some violence to the external auditory meatus. There was an absence of any thin watery discharge from the ear, which, although not common, is most certainly, when present, a very grave symptom, and pathognomonic of fracture of the base of the skull. The fracture, under such circumstances, passes through the internal auditory foramen, rupturing the tube of arachnoid which accompanies the auditory and facial nerves entering into that meatus. Other general symptoms pointed however to the seat of injury. On the second day he became drowsy; on the fourth day he had pain in the head, and was soporose with frowning; his skin was hot and perspiring; pulse rapid; dry tongue; and delirium. All these were unfavourable symptoms. The features were drawn to the right side; the eyelids, eyeball, and pupil were paralyzed; the secretions were passed involuntarily from the fourth day; coma set in, and death followed.

The details of the post-mortem examination fully describe the great extent of the fracture, which, together with the notes of the case, were taken by Mr. S. E. Clarke, the dresser of the patient.

R. W.—, a lad, aged fourteen, while playing with some companions, fell from a lamp post, and struck the left side of his head violently against the edge of the pavement (April 18th). He was brought into the hospital two hours afterwards bleeding from the left ear, but perfectly conscious. Had vomited several times on his way thither, and once after he had been put to bed, but has been quiet since. At present (19th) he appears drowsy, but complains of no pain except griping (caused, probably, by some aperient medicine which has been ordered by the house-sur-

geon). Has no paralysis of any part, but is very tottering; pupils natural; pulse 116; tongue whitish. He is taking a saline mixture every six hours, and has cold lotions applied to the left temple.

April 20th.—Rambled a little in the night, but looks better this morning; has a slight frown, but owns to no pain in any part; tongue moist and white; the bowels have not acted to-day; pulse 76; no discharge of any kind from either ear.

21st.—Passed a very restless night, complaining of pain in the head, which still continues; lies in a dozing condition; frowning as yesterday; skin hot and perspiring; pulse 100; tongue moist and white; doubtful whether the features are not drawn a little to the right side; left eyelid droops more than the other; bowels acted twice in the night. Ten leeches to be applied to the left temple, and mustard to the feet.

22nd.—Has been restless and wandering during the night; answers questions, but not very articulately, and in attempting to do so, the features are drawn to the right side; puts out his tongue slowly, less white than yesterday, but dry; bowels have been opened two or three times without medicine; pulse 108; hands and feet cold. The leeches which were applied yesterday bled freely, with relief to the pain, but not to the other symptoms; the sinapisms had no effect. Hot bottles ordered to the feet, and evaporating lotions to the head as before. To have a grain of calomel, and one-sixth of a grain of opium, every alternate hour.—Ten p.m.: Talking incoherently all day, and did not recognise his parents; bowels have not acted since the morning; pulse 128, feeble; hands cold; feet warm; left eyelid slightly swollen and partially opened, incapable of being closed, and offers no resistance when separated; conjunctiva dry and injected, but not wanting in sensibility; globe motionless, pupil likewise, and insensible to the strongest light; no paralysis of the limbs; right orbicularis resists strongly any attempt to separate the lids.

23rd.—Still talks incoherently, and rambled all night, but has taken some arrowroot and beef-tea; answers questions put to him (yes or no). Paralytic symptoms the same; pulse 126, feeble; extremities warm; bowels have not acted. Puts out his tongue when told to do so; still dry.

24th.—Lies in a comatose condition, and has ceased to ramble. On being asked questions, he endeavours to answer them, but cannot make himself understood. He is unable to put out his tongue when told to do so; breathes audibly, and has a slight cough; pulse 140, small and feeble; extremities warm; bowels have not been moved naturally since the morning of the 22nd, but feces and urine have passed unconsciously since the afternoon of the same day.

25th.—Is lying on his right side, having been placed so by the nurse, owing to his back having become sore; is perfectly quiet; breathes hurriedly; eyelids of both eyes apart; no resistance is now offered by the right on separating the lids. An herpetic eruption has made its appearance

about the mouth and on the chin; pulse 160, small and feeble. On being moved by the nurse, cried out, "Oh my head!" but now lies in a comatose condition, and makes no attempt to answer questions. Died at three p.m.

Autopsy, forty-eight hours after Death.—Rigor mortis was still present. Blood existed between the scalp and the temporal fascia on the left side, also in the substance of the temporal muscle, and between the dura mater and skull in the same situation. There was great congestion of the cerebral veins. A patch of recent fibrin, the size of a florin, was found beneath the arachnoid, about the centre of the left cerebral hemisphere, and the same inflammatory deposit occupied the greater part of the right, extending slightly into the longitudinal fissure, but it was confined to the sub-arachnoid spaces. A similar deposit occupied the sub-arachnoid spaces at the base of the brain. Some blood was extravasated between the posterior lobe of the cerebrum and the upper surface of the cerebellum. Two fractures were discovered, one extending from the upper margin of the squamous portion of the temporal bone on the left side, through the middle fossa of the base of the skull into the spheroidal fissure immediately in front of the foramen rotundum, thence across the side of the body of the sphenoid bone, traversing the cavernous sinus, and passing over the olivary process, terminating at the foramen opticum on the right side. Another fracture extended transversely across the petrous portion of the temporal bone near its junction with the squamous portion, then passed forwards and inwards parallel with the one first described, and terminated at the foramen spinosum. No fracture was detected of the opposite side of the bone. The left orbit was unroofed, and the nerves dissected out, but nothing abnormal was detected in the cavity. Some extravasated blood was found beneath the dura mater, near the inner part of the middle fossa, and the injury to the orbital nerves appeared to have been done in their transit through the cavernous sinus, although unfortunately they were not dissected out with that care which would have been desirable. Before their entrance into the sinus, and after their exit from it, their integrity was perfect. It was not also very satisfactorily determined at what point of its course the portio dura was injured. The blood which escaped from the ear evidently came from the "meatus auditorius externus," as no blood had been poured into the cavity of the tympanum, which was uninjured. It therefore probably had its source from the small vessels ruptured by the fracture traversing its roof.

UNIVERSITY COLLEGE HOSPITAL.

The Osteotrite, for the Removal of Carious Bone, either from the Surface or from the Interior of Cavities.

(Invented by Mr. MARSHALL.)

Or all the various instruments in daily use for

the removal of diseased bone, in a carious or necrosed condition, which we have, we may truly say, hundreds of times seen used, none have appeared so ingenious and useful as the osteotrite, recently invented and employed by Mr. Marshall. It consists of a handle similar to that of the common gouge, into which is fixed a steel shaft, terminating in a round, somewhat conical head, which varies in size, but which possesses a series of spiral cutting edges, radiating from two points on the sides of the vortex. Between these two apices are two or three other spirals, which are continued across the head. The grooves between the spiral edges are deep, and about an eighth of an inch apart, the teeth thus formed being turned to the right, and are pretty sharp. The drawing gives a



good idea of the instrument, which is about the length of an ordinary gouge, but constructed on the principle of the "millhead" instrument in common use amongst dentists. It might be looked upon as one, on a large scale. There are three sizes of the instrument, made by Coxeter, of Grafton-street, one larger and one smaller than the drawing, which represents the medium size. When the osteotrite is used, as, for instance, on a soft surface of bone, and rotated by a movement of the wrist, it cuts like a saw or rasp, and removes with perfect ease the diseased structure, the sensation communicated to the hand indicating when it is in contact with healthy bone. It can be, moreover, introduced into a cavity without much dilatation of the external wound, and the diseased structure lining its interior removed with facility. As contrasted with some of the ordinary instruments in use, it does not leave any loose splinters behind from the nature of its action; and as it is very strongly made, there is no risk of accidents from breakage or from slipping.

We have seen it used by Mr. Erichsen to remove some diseased bone from the femur of a boy, on whom he had performed excision of the hip-joint some months before. Mr. Marshall employed it with good effects in a case of necrosis of the ribs, and in one of caries of the os calcis in a girl. It is not an uncommon thing to find pretty large cavities in this last-mentioned bone, which we have seen sometimes give the surgeon great trouble to clean out; with the osteotrite, however, all the soft and carious bone is got rid of most effectually. In Mr. Marshall's case, the cavity in the os calcis was cleared of disease through a small external wound; and upon the rib, the healthy bone was known at once when the diseased part was removed. The same principle guides the dentist in his operations on the teeth. We have heard the

inventor say that he can remove the diseased bone from a very large surface by its means.

CHARING-CROSS HOSPITAL.

A Case of Wrist-drop in a Composer, from Local Lead Poisoning, speedily yielding to Treatment.

(Under the care of Dr. HYDE SALTER.)

THE patient was a compositor, aged thirty-nine, married, of temperate habits, and uninterrupted good health. For a week previous to his admission, he had been using new type, which, from its sharp edges, had quite worn the skin off the extremities of the fingers of his right hand—the first and second fingers especially, and the thumb, were quite bare. Two days previous to his admission—that is, after using the new type five days—he noticed that his right wrist was weak, and at the time of his admission the paralysis was complete; his right hand dropped powerless, and could only be raised by means of his left, and he could not grasp anything. From the short time that the paralysis had existed, there was no appreciable wasting of the muscles of the hand or forearm. The man had never had wrist-drop before, or colic; there was no blue line along the gums. He stated that it was very common for wrist-drop to come on in compositors after using new type, doubtless from the rapid absorption of the lead at the extremities of the fingers, denuded of their epidermis.

From the local application of the poison, and the local limitation of its results, Dr. Salter determined to treat it locally; and bearing in mind the strong affinity of sulphur for lead, the ease with which the salts of lead are decomposed by sulphurets, and the facility with which the skin both absorbs and evolves sulphur, he determined to confine his treatment to soaking the hand and wrist in a solution of sulphuret of potassium, and thus to eliminate the lead. The solution was made of the strength of one ounce of sulphuret of potassium to ten ounces of water, and the patient ordered to keep his hand in it for three hours at a time, thrice in the twenty-four hours—nine hours in all; the solution to be tepid. No other treatment was adopted. In two or three days, the power of the hand and wrist began to return; in a week, the hand was as strong as the other, and the patient left the hospital well. Doubtless the thoroughness with which the treatment was applied tended greatly to the rapidity of its results.

There are two points of interest in this case, besides the effect of the treatment, illustrative of the differences between the wrist-drop of painters and that of compositors. It is always the right hand (we do not think the left ever) that is affected in compositors; in painters, it is generally both. In compositors, the hand is affected locally, before the system; in painters, secondarily to its introduction into the entire body; so that in compositors, you get wrist-drop first, then the blue line of the gum, and colic; (if ever), in painters, the order is reversed. These differences evidently depend on the different method of the introduction of lead

into the body: in painters, by respiration, with their food, and by their skin generally; in compositors, through the ends of the fingers of the right hand, with which they handle the type.

ROYAL FREE HOSPITAL.

The Prevalence of Boils and Carbuncles in an Epidemic Form; five Cases, one of them Fatal.

(Under the care of Mr. T. WAKLEY and Mr. COOKE.)

CASE 1.—Ebenezer A——, aged forty-two, a shoemaker, of large, muscular, flabby build, tolerably steady habits, and average good living, first noticed a rather painful circumscribed swelling in his neck about a week before admission, to which he applied a poultice, and consulted a medical practitioner, who opened it in the usual manner, with temporary relief, and advised him to seek admission to some hospital. When admitted, some days after the above, the swelling was so considerable as to prevent him from raising his head, standing, walking, or other serious exertion; and though the crucial incision was freely practised, and wine, brandy, eggs, and nourishment were liberally supplied, the swelling daily enlarged, involving the entire dorsal aspect of the neck, some considerable portion of the scalp, and extending as far forwards as the ears. Coma supervened, and he died, exhausted, some days after admission.

CASE 2.—B. F.—, (admitted under Mr. Thomas Wakley), aged fifty-two, hair-dresser, of medium height, thin, spare, sallow, and cachectic, describes his habits as regular; says he has generally lived well, and resides in a neighbourhood which is regarded as healthy and free from offensive effluvia; has been in straitened circumstances lately, and fared, in consequence, indifferently, but has at no time wanted ordinary necessaries. First noticed a boil on the abdomen, near to and a little below the umbilicus, about a week before admission. He had recourse to the usual appliances of poultices and purgatives; but its outline increasing in extent, becoming hard, tense, and painful, and affecting his general health, he applied to the parish surgeon, who practised the crucial incision, ordered nourishing diet, and, in its absence, recommended him to apply to some hospital. When received into this institution there was considerable excitement, with prostration; occasional rigors; a pinched, icterode expression of countenance; weak, compressible, frequent pulse (116), and other symptoms of nervous exhaustion. The carbuncle presents a dirty-red surface and exudes a scanty ichorous discharge; is situated below and between the umbilicus and pelvis, partially involving the latter within its area; and is from three to four inches in diameter either way. There is another, of smaller dimensions, somewhat above, and to its left. As soon as some reaction was established a crucial incision was made, a carrot poultice applied, brandy, bark, and the other usual adjuncts in such cases, were freely exhibited, and he is now (April

6th) in a favourable way towards convalescence. The urine in this case was saccharine.

An analogous case we remember to have seen under Mr. Holt, at the Westminster Hospital, where the mass, as in this case, occupied the lower portion of the abdomen. The result, we believe was favourable.

CASE 3.—G. S——, aged fifty-four, a tailor, pallid, waxy-looking, and of irritable nervous temperament, but living well, and of quiet habits, applied as an out-patient about ten days ago (the latter end of March), at which time there were two carbuncles on the back of the neck; one of considerable size, hard, tense, and brawny; the other smaller, about the size of a pigeon's egg, and situate behind the right ear. Incisions were practised on both. He was ordered the compound cinchona mixture of the hospital, directed to use linseed and charcoal poultices, and desired to live as well as his circumstances would permit. He is extremely anxious to get well, rigidly adheres to his instructions, and promises in a few days to be fit for his ordinary duties.

CASE 4.—J. S——, aged forty-four, a milkman tall, ill-conditioned, exsanguine, and of bilious temperament, residing in an underground, ill-ventilated cellar, applied as an out-patient on March 27th, complaining of pain and tightness in the leg, which, on examination, was found to present a distinctly-circumscribed, reddish, furunculoid enlargement, of small dimensions, but very hard, extremely sensitive, and scantily discharging some discoloured pus through several pores on pressure. It was freely opened, and bread poultices ordered to be applied; and the patient to have tonics, beer, and as much other support as he could procure; and when last seen the sore was granulating healthily, and promised complete cicatrization in a few days.

CASE 5.—Jane A——, aged thirty-nine, jaundiced and dyspeptic-looking, complains of flatulence, borborygmi, and gastric pain after meals, and says she chiefly subsists on tea, fish, and the like, and rarely has any animal food; is not given to drink, but thinks her husband might have formerly given her "something;" and is rarely free from sinking and uneasiness for a day together. About a week ago she noticed a reddish, angry-looking swelling on the right buttock, to which she applied a poultice or mixture of soap and sugar, and took some "cleansing stuff;" but as its circumference seemed to attack a larger space, and the swelling becoming more painful and throbbing, preventing her from walking or resting on that side, she came to the hospital, and, on examination, was found to present the usual characteristics of carbuncle, and was treated in the ordinary way, with a result which, considering her cachectic condition, was very encouraging. She is now under treatment for an affection entirely unconnected with the boil, which has almost completely disappeared.

ST. BARTHOLOMEW'S HOSPITAL.

Two Instances of Tuberculous Disease of the Testis; Castration in Each, one by the Écraseur, the Other by the Knife; Recovery.

(Under the care of Mr. LAWRENCE.)

THERE were two cases of some interest brought into the operating theatre on the 20th of June, from the fact of both requiring castration. The first of these was an adult, whose right testicle became swollen in March last, with the formation of matter, with fluctuation in the scrotum, which was evacuated, the fluid being of a scrofulous, curdy character. The testicle now grew hard and painful. This was treated by mercury without any effect; and as the man was far away from his family, he was desirous to return to them cured as soon as possible, and wished to have the testicle removed, which was done by Mr. Lawrence with the écraseur. The testis and scrotum were tied with a string, as is usual before applying this instrument, and it was then put on. Just before its complete separation, a piece of the string got entangled with the chain, obliging Mr. Lawrence to complete the division with a scalpel. There was very little bleeding indeed. A section of the testicle showed the structure of the gland to be tolerably healthy; but minute deposits of tubercle had begun in the substance, resembling isolated beads, which were carried so far in the epididymus, especially the globus major, as to have formed abscesses from softening of the yellow crude tubercle. The nature of the case was, therefore, clear enough. It was remarkable to observe, however, that although this deposit was going on, the tubuli seminiferæ were pretty healthy, as they could be drawn out with a pair of forceps. The spermatic cord was also healthy. The écraseur was employed here because the scrotum was loose, and the cord could be easily insulated.

The other instance was one in which the left testicle had attained to the size of a shaddock, with a large ulcer on its anterior aspect discharging pus, which did not communicate with the tumour itself. The patient was also an elderly man, who stated in his history that from the time of his being eleven or twelve years of age, his companions observed he had a large testicle; this was even the case at present with the right. Some weeks ago, his occupation rendered it necessary for him to walk from Paddington to Bow, and then back again daily. This severe exercise caused its increase to the size of an orange; but it further enlarged. An abscess formed at the anterior part of the scrotum, which was opened, scrofulous matter and blood being evacuated. It then shrunk a little: but he returned to the hospital to have the testicle removed, which was done by Mr. Lawrence on the same occasion as the first-mentioned case. The knife was used to accomplish this, as the case was not one suitable for the écraseur. There was a good deal of hæmorrhage during the operation. On making a section of the tumour, a quantity of

dirty pus squirted out, which came from the sac of the tunica vaginalis, which was lined with a thick, pultaceous, and partly tuberculous material. All the epididymus was gone, the abscess being in contact with the testis itself, the structure of which looked healthy, but it was implicated in the disease, in so much that it was softer than natural, and the contiguity of the seminal tubulus appeared to be destroyed. The disease evidently commenced in the epididymus in this case, of a tuberculous character, the structure breaking down with the formation of matter which communicated with the sac of the serous covering of the testicle, which took on the same diseased action.

In both of these cases the tubercular disease attacked firstly the epididymus, the form in which it generally begins as shown by Mr. Curling, and subsequently engaged other parts; the body of the testicle in the second appeared to be free from any deposit. Mr. Curling mentions, in the last edition of his work on "Diseases of the Testis," that he has seen a large number of cases of tubercular testicle, and he believes the disease to occur primarily in this organ more frequently than is supposed. In many instances only one gland is attacked; but not unfrequently both are affected simultaneously, or one shortly after the other. We very much fear that in the second case we have recorded there will be a return of the disease, for we by no means looked upon the remaining testicle as altogether healthy.

CHARING-CROSS HOSPITAL.

Compound Fracture of the Leg with Sloughing; Amputation; Death from Gangrene.

(Under the care of Mr. HANCOCK.)

THE injuries sustained in the following case, of which we give an abstract merely, produced such an amount of constitutional disturbance, with sloughing of the wound, that Mr. Hancock found it necessary to amputate the leg. Unfortunately gangrene set in, and produced a fatal result, which need not surprise us when we reflect upon the amount of fatty degeneration of most of the tissues, especially implicating the heart and larger blood-vessels found after death. The autopsy is one of some interest.

G. C—, aged fifty-six, a spare man with grey hair, was admitted on the 28th April, with a compound and comminuted fracture of the left leg. The bone was reduced with great difficulty, leaving an extensive wound, which suppurated extensively, and showed no unfavourable symptoms until the 3rd of June, when it appeared unhealthy, and considerable constitutional irritation set in; this increased on the subsequent days. He became delirious; the wound sloughed, and it was decided to remove the leg, which was done below the knee. On the 10th June, gangrene attacked the stump, and the patient gradually sank.

Autopsy.—Pus was present in large amount in the right knee-joint, also in and around the right

sterno-clavicular articulation. Thorax: Right lung firmly adherent to the costal pleura; healthy, as was also the fellow organ. Heart somewhat larger than natural; much encumbered with fat; coronary arteries freely studded with atheromatous patches; substance of the heart pale; texture very friable, and the whole organ flabby. The microscope showed extensive fatty degeneration; the valves of the left side were here and there opaque from small fatty deposits. Abdomen: Liver large, very pale, and all the hepatic cells engorged with oil globules. Spleen of natural size, but softer than usual. Kidneys presented a few small watery cysts, of pale hue; distinctions between cortical and medullary portions well marked. The aorta in its whole extent from the heart to the iliac was studded with large and small patches of atheroma.

ROYAL FREE HOSPITAL.

Necrosis of the Lower Jaw from the Fumes of Phosphorus, commencing Two Years ago, necessitating Removal of the Right Ramus and Part of the Body a Year ago by Mr. Solly; Successful Excision of the Remaining Two-thirds by Mr. Wakley.

(Under the care of Mr. THOMAS WAKLEY.)

As yet the important subject of necrosis of the lower jaw arising from the fumes of phosphorus has been only lightly touched upon in the textbooks of modern surgery. We meet with occasional examples in our hospitals of this disease in the persons of those who are engaged in the manufacture of lucifer matches, who, from the peculiar nature of their employment, are thus disposed to this particular affection. It is a curious fact that the lower jaw only, of the bones, becomes affected by the phosphorus, and the question very naturally suggests itself to our minds, how is it that other parts of the face, such as the nasal cavity, the throat, or the bones of the upper jaw, are not equally affected with the lower? This is explained, we are told, by those surgeons and others, especially Dr. Roussel, who have had much experience of this affection, by the fact, that it arises from the possession of carious teeth, and those workmen whose teeth are sound enjoy an immunity from it. Mr. Simon, who delivered a Clinical Lecture at St. Thomas's Hospital upon this affection, says—"The disease only attacks persons with carious teeth, and it operates in the buccal rather than in the nasal cavities, because it is only in the former that the phosphoric vapour is enabled, by carious teeth and ulcerated gums, to come into direct contact with the periosteum, on which its irritating influence is subsequently exerted." The truth of this statement has been confirmed by the experiments of Von Bibra upon rabbits, as the characteristic disease could not be produced unless the jaw was denuded of periosteum in the animals exposed to the chronic influence of the phosphoric vapour. Workmen employed in the manufacture of chemical matches are exposed to accidents as well as disease from the vapours of the compounds used, but it is unnecessary here to dwell upon the

former. Besides the affection of the jaws and the teeth, as considered by some observers, which are the effects of the vapour of the phosphorus, Dr. Waller Lewis mentions, in his valuable "Report on the Regulation of Noxious Trades and Occupations in France,"* that bronchitis more or less severe is a common affection amongst many of the work-people, and he gives abundant evidence from various sources in proof of this. Thus he says—"Evidence obtained at Strasbourg by Dr. Strohl confirms the accounts of the severe attacks of bronchitis already spoken of. This physician reports that the workwomen have declared to him 'that the phosphoric emanations were very irritating.' A great number of them are seized with a cough, which is sometimes troublesome and continuous enough to oblige them to cease their work."—p. 111.

Dr. Charles Lepine has remarked that almost all of those who worked in a certain large workshop, where the filling and emptying of the presses takes place, as well as the making of the packets, are attacked with a cough more or less intense, but has not caused the cessation of work in any one instance. M. Roussel says, on the other hand, he had not yet met in manufactories of Paris any cases of real severity; but on questioning some of the workwomen, it was ascertained that several of their companions had been obliged, in consequence of neglected colds, to leave the factory, and in general, they added, that these had become consumptive.

Now, the cause of these affections is clearly understood, and hygienic precautions are adopted as much as possible to prevent the deleterious effects of the phosphorus. The composition of the vapours thus poisoning the atmosphere Dr. Dupasquier has found to consist principally of hyphosphoric acid, probably mixed with small quantities of phosphuretted hydrogen, and possibly the phosphorus itself in the form of vapour. The gases which the workmen expel from the stomach in the dark of night thus become luminous, appearing as it they breathed flames from the mouth.†

The effects of the phosphorus, then, are diseases of the teeth, which are followed by necrosis of the jaw; and diseases of the lungs. We do not think we shall be wandering from our path if we should take this opportunity of stating that one of the duties of the medical officers of health, in districts where these manufactories are situated, should be to ascertain the fact that the operatives are free from diseased teeth. Fortunately, so far as we have opportunities of knowing, in this country, the chest affections from the phosphorus are very rare, and life has not been so much endangered as in France and Germany, particularly in the town of Nuremberg in the latter country, where, owing to the large scale upon which phosphorus is used in match making, the diseases arising from it have actually proved very fatal.

* Presented to both Houses of Parliament. London, 1855.

† Dictionnaire d'Hygiène Publique. Par Ambroise Tardieu. Tome I., p. 76.

We have availed ourselves of the following details of the case, which were taken by Mr. W. Curran, the house surgeon of the hospital.

Edward E—, aged twenty-eight, a lucifer match maker, of healthy parentage, stout and muscular, of florid and unexpressive aspect, and uncleanly habits, was admitted on the 4th of June under the care of Mr. Thomas Wakley. He states that he has been engaged for the last seventeen years in the above calling; he was of quiet, abstemious habits, and good substantial living; has never had syphilis, fever, or other severe ailment, and does not remember being ever troubled even for a day with any complaint affecting his general condition, or involving the necessity of abstaining from his usual duties, until two years ago, when he began to suffer from some passing uneasiness in the lower jaw of the left side, for which he applied at this hospital, and was ordered some gargle and medicine, which afforded him much relief. This recurred with greater severity, becoming more persistent and troublesome, accompanied with nightly aggravation of suffering, and some occasional fetor of breath. He betook himself to St. Bartholomew's, and there was relieved from time to time of several teeth, and treated otherwise with poultices, gargles, and "bitter medicines." After wandering about for a long period, indifferently clothed, and obtaining a poor, eleemosynary subsistence as best he could, he applied at St. Thomas's Hospital, and was admitted under the care of Mr. Solly, in a very feeble and tottering condition, from which, however, he was soon recovered by the liberal allowance of support and stimuli, with which that gentleman, he says, freely indulged him. As soon as his condition would permit, a portion of the ramus and body of the lower jaw was removed by Mr. Solly as far as the second molar tooth. As he was not allowed the use of chloroform, the process was very painful, and so influenced his mind in its favour as to make him regard another operation with dread, and stipulate for its exhibition as a *sine quâ non* on any future occasion. He remained under treatment for more than three months in St. Thomas's, and was then obliged to become an inmate of a work-house, where he resided for eight or nine months, not being under any treatment during that time, though frequently complaining of pain, and showing by the offensive odour of his breath and constant smelling discharge that decay was advancing towards parts essential to life.

Being somewhat erratic in his movements, and fond of change, he was again encouraged to seek relief at another hospital—St. Bartholomew's—where he was under treatment for some weeks. He sometime afterwards came here and was admitted, presenting an appearance of suffering and misery rarely met with. On admission, he had a very bloated and forbidding look, the face being swollen, puffy, and cedematous; the lower lip pouting and enormously depressed, and the upper prominent, bulging, and very red. There was considerable swelling and tumefaction under the jaw, to which a probe could be easily passed through

numerous unhealthy fistulous tracks. Large, irregular, and puckering cicatrices existed on the right side, and copious, very offensive discharges, of a foetid odour, passed out from the opposite side. The jaw itself and lips were covered with some blackish, slimy stuff, and the smell from the breath was quite intolerable. He was put on a mixture of chlorate of potash, muriatic acid, henbane, and bark; had his mouth frequently washed with a strong solution of the liquor of the chloruret of soda, was kept very clean, had the discharge encouraged by soothing applications, and given as much support as he could partake of.

On the 12th of June his appearance and general condition were so much improved as to admit of the following report:—The fetor of the breath has considerably diminished, the discharge is also decreasing; the outline of the face is more symmetrical and *human*, and he is in other respects very markedly improved. On the 18th, the improvement was more obvious and progressive; there was almost complete immunity from the pain of which he complained about the jaw, and thence downwards towards the sternum; walks about freely; converses with, and does little offices of kindness for, his fellow-patients, and is very hopeful of a favourable result.

June 24th.—He is still better; the discharge is less foetid; the pulse is steady, soft, and natural; sleep good and refreshing; is always ready for food, the solid parts of which he is obliged to *bolt*, in consequence of being unable to masticate them, and this he always does with great ease and peculiar gusto. He has repeatedly asked for an operation, but says he is determined not to submit to any more cutting without chloroform, and professes his willingness to undergo any amount of suffering and inconvenience, however prolonged, unmitigated, rather than again encounter the *conscious* horrors of his former trial.

Under these circumstances, Mr. Wakley, anxious to remove the cause of so much irritation and mischief, and also to avoid unnecessary opposition to his wishes on the score of the anaesthesia, allowed its exhibition: and on the 29th of June, when the patient was fully under the influence of chloroform, he proceeded to remove the remainder of the lower jaw as follows: An incision was made, commencing at the neck of the jaw on the left side, running downwards along the inferior margin of the ramus and body towards the chin, and continued from the chin upwards through the mesial line, through the centre of the lower lip. The flap thus formed was detached from the subjacent structures and held upwards, whilst the lower jawbone was completely dissected out. It was then sawn through just below the neck, and entirely removed with several portions of the new shell around it. Some of these were detached and diseased, and it was thought advisable to remove them, as likely, if left, to incommode the process of healing. The old sawn portion of the jaw, an inch to the right of the symphises, corresponding to the dental foramen, was found to present the same appearance

as on the day when Mr. Solly operated, and the whole of the bone, with the exception of that at the neck, was quite dead, in a completely necrosed condition, and smelt horribly. At an early period of the operation, when the flap of the cheek was raised, a ligature was passed through the tip of the tongue, and that organ was carefully held out of the way by Mr. Gant, as well as being prevented slipping backwards during its performance. Notwithstanding that the facial artery and some other vessels were timely secured during the operation, a good deal of blood was unavoidably lost, partly depending upon the very vascular condition of the soft structures, but principally from a branch of the sublingual which was divided. The parts were then brought together by sutures, and the deformity, from the still swollen size of the face consequent on the removal of the bone, was but trifling. The patient, who had been pretty well under the influence of chloroform the greater part of the time, now rallied, and was conveyed to his bed. He was allowed a little wine, and remained that day without a single bad symptom, sleeping soundly during the night. This was followed by even greater improvement, and freedom from the slightest uneasiness the day following the operation. He has gone on satisfactorily ever since the operation. Complete union by adhesion occurred on the third day. He is now convalescent, takes plenty of nourishment, and articulates in speaking perfectly.

ST. GEORGE'S HOSPITAL.

Housemaids' Knees in a Woman aged Forty-five Years; Suppuration and Thickening of the Right; Complete Removal of the Bursal Sac.

(Under the care of Mr. PRESCOTT HEWETT.)

THE enlargement of the bursa over the patella, so commonly met with in housemaids, arises from the severe pressure exercised by the peculiar nature of their employment. Special occupations which induce pressure in any particular part of the body will either produce enlargement of the bursa, if they there exist, or will induce their formation, continued friction and pressure bringing about this result. An affection analogous to housemaids' knee is miners' elbow, because miners are subject to an enlargement of the bursa lying over the olecranon. We might refer to numerous situations where these bursae appear, but it will be sufficient to refer to some recent examples which have come under our notice, the treatment adopted in each proving successful. Thus, nearly a year ago, we saw an instance, in University College Hospital, of an enlarged bursal tumour in a woman aged forty-five years, in whom it had been coming and going, she said, for six months, but most probably existing much longer. It was present over the front of the shoulder, closely in contact with the capsule of the joint, and was carefully dissected away by Mr. Erichsen; it was the size of an orange, its coats thickened, and caused much inconvenience. She got well with-

out any trouble, and had another at the back of the lower part of the right arm.

Later than this, a case of enlarged bursa over the styloid process of the radius of a girl, in St. Mary's Hospital, was treated by Mr. Üre, who cut it across, and allowed it to heal up by suppuration.

Some months back, an elderly woman presented herself at King's College Hospital with a bursa over the left knee the size of an orange, which she had had for some years, and it was latterly producing so much inconvenience that she was desirous to have it removed. This Mr. Fergusson did under chloroform, removing it altogether by dissecting it out, which he thought a better plan of getting rid of it than by making an incision, and allowing suppuration to do the rest. He did not consider the risk greater from its entire removal than when other means are adopted. As surgeons are aware, the objection which has hitherto been urged against complete dissection of a bursa is, that it leads to erysipelatous inflammation. Mr. Fergusson's case, however, did well without that result.

On the 2nd of July, we saw Mr. Hewett, at St. George's Hospital, treat a case in a similar manner, of which we gathered the following particulars:—The patient was an apparently healthy woman, aged about forty-five years, the subject of housemaids' knee in both knees for some years; that situated over the right patella had been subject to repeated attacks of inflammation, and had been submitted to a variety of treatment to promote absorption of the fluid, such as the application of blisters, tincture of iodine, &c., which sometimes will effect a cure. As happens occasionally in chronic bursitis, the capsule gets thickened and enlarged from the deposit of lymph in its interior; that was the case here with the right knee, which, moreover, suppurated, a probe passing into the sac through a fistulous opening. In consultation with his colleagues, Mr. Hewett determined very properly to remove the tumour, which he did when the patient was under chloroform, using some caution when doing so, as it covered a portion of the joint, which, if wounded, would have proved an unfortunate circumstance. When the bursal tumour is small, removal can be effected without danger, because it lies over the sesamoid bone; but when large, as in the present instance, some of the ligaments and membranes of the joint become covered by it, and the capsule may be wounded if care is not used. The walls of the sac, when laid open, were more than half an inch in thickness, being less so posteriorly, being formed of hard fibrous tissue, and lined with a true pyogenic membrane. The bursa on the left knee is as yet perfectly soft, and hopes are entertained of the absorption of the fluid by proper measures. Mr. Hewett remarked, that the only risk the patient ran from the proceeding adopted was from erysipelas or diffuse cellular inflammation; but as she was in good health, and the wards unaffected, it was hoped that any fears might prove groundless. We are

glad to say the patient has gone on well since the operation.

Three modes of treatment are generally adopted for this affection—namely, injection by the tincture of iodine, passing a seton through the tumour, and dissecting it out altogether. The first is only applicable to simple uninfamed cysts, and will effect the desired end. The second, if applicable at all, is so in the chronic forms, with thickening, suppuration, &c.; but complete removal by dissection is the effectual and most convenient method after all of getting rid of it, and no uneasy swelling remains. The cure is perfect.

We remember an instance very well, some months back, of a tumour extending deeply in the plantar fascia of the foot, which was removed by Mr. Erichsen from a woman in University College Hospital. It very much resembled a bursal tumour, but was developed in the sheaths of tendons. It was partly solid, and contained a number of melon-seed-like bodies, or fibrous substance coloured with blood. Formerly, this was looked upon as malignant, and limbs were amputated for it.

Foreign Department.

Empyema in a child, twenty-seven months old; Paracentesis repeated three times; Iodine Injection; Recovery.

M. MAURICE, of Versailles, lately read an account of this case before the Medical Society of the Hospitals of Paris. M. Maurice was called to the child on the 31st of January last, and found all the signs of effusion on the left side of the chest. On Feb. 2nd, a quart of creamy inodorous pus was removed by the trocar and canula; on the 7th, a new operation was judged necessary, and performed by means of a lancet covered with gold-beater's skin, the latter being glued to the skin with collodion. Thirteen ounces of pus were evacuated, and on the next day, the previously compressed lung was found in contact with the ribs. On the 11th, four days after the second operation, a third was performed. Ten ounces of pus were removed with Reybard's trocar and canula, which latter was left forty-eight hours in the wound. On removing the canula, a simple tent of lint was introduced, and a little air was noticed to enter the chest by the wound. The fistulous opening persisted, and gave, on forced expiration, issue to bubbles of air; the wound in the meanwhile inflamed, the child became feverish, and diarrhoea supervened. On the 20th, an injection of tincture of iodine was resorted to, and on the 23rd, a tube was introduced to allow of the escape of serum and pus. The child now rapidly recovered, and seemed well on the 28th. On the 4th of March, however, tympanitic resonance was observed under the left clavicle, and an amphoric murmur, with bronchophony over the cicatrices; whilst vesicular breathing was everywhere audible. A few days afterwards, M.

Maurice found, with surprise, signs of the existence of air and fluid towards the external side of the left half of the thorax, especially when the child cried. The latter was shown to the Society, to give the members an opportunity of observing the above-named signs for themselves.

Climates free from Phthisis

M. BOURN, chief surgeon of the Roule Hospital (Military) at Paris, has just published a compendious work on medical geography and statistics, including endemic diseases. In this very remarkable book we find the following data on phthisis: "There are countries where phthisis is unknown, as, for instance, Iceland, as stated by Dr. Schleisner; no phthisical patients are ever seen in Finmark; and the Swedish physicians affirm that consumption becomes less common as we proceed northward; there is, in fact, such a thing as a preventing action of the polar regions. In England, statistics show that in the army the maximum number of deaths by phthisis is to be observed amongst the troops quartered in the United Kingdom; that this number diminishes in warm countries, and is lowest in cold climates. As to the civil population of Great Britain, it is found that in London the deaths from phthisis are 18 per cent.; in Edinburgh, 11.9; Leith, 10.3; and Aberdeen, 6.2. The English soldier is more often the prey to the disease in his own country than in any other. The mortality from phthisis amongst the military is lower anywhere else than in England, not only in the south, but more particularly towards the northern climes. There are two or three times less cases of phthisis amongst the troops stationed in Canada than amongst those who stay at home. The preventive action of warm climates varies with the longitude; in the torrid zone, for example, the maximum corresponds to the West India islands, and the minimum to Madras. The sea acts as a preventive of phthisis, and the deaths from this disease are more numerous in the army than the navy. The infantry of the line loses annually by phthisis in the United Kingdom 8.9 men per thousand; the guards, 12.5; and the mortality from the same disease becomes lower in the colonies. At Malta it is below 5 per thousand; in Gibraltar, 4; at the Mauritius and Ceylon, 4; at the Cape 3; and in the Madras presidency, 1."

Artificial Anus in the Right Flank.

M. JOBERT (de Lambelle) made in the usual manner, in the beginning of April last, an artificial anus in the right lumbar region, upon a patient of M. Trouseau, for intestinal obstruction. The man died the next day, and the autopsy showed that the opening had been made in the lower part of the ilium, and that the knuckle of bowel was already adherent to the lips of the wound. The cause of the obstruction was, as is supposed by the gentlemen who conducted the post-mortem examination, an unusual distension

by flatus of the sigmoid flexure of the colon, by which the bowel had turned upon itself, and formed a fold which presented an obstacle to the fecal matter.

Cysticercus in the Crystalline Lens.

M. LIEBREICH mentions in the *Archiv für Ophthalmologie* the case of a young man aged twenty-three, affected with converging strabismus. With the ophthalmoscope an opacity was seen in the pupil of the left eye; and behind the opacity was a little bluish foreign body attached to a dark and circular vesicle which moved with the eye. By using reversed images, the author ascertained that the anterior part was the head, and the oval and dark portion the vesicle, of a cysticercus. A third membrane, which surrounded the animal, reached to the back part of the eye. M. Liebreich could perceive movements in the anterior parts of the parasite. The patient had passed fragments of tænia. De Graefe had observed five cases of cysticercus in the retina, one of which he published very lately. Out of three women thus affected, two were pregnant.

Fresh Attacks on the Exclusive Glucogenic Properties of the Liver.

EXPERIMENTALISTS seem to have made it their task to put to the test most of the tenets lately put forward by Professor Claude Bernard, the successor of Magendie. M. Colin, attached to the Veterinary School of Alfort, near Paris, had experimentally proved that the chyle obtained from the larger ruminants, fed exclusively upon animal substances, contains already some sugar, and that latter is therefore not *primarily* formed in the liver. M. Bérard, professor of physiology at the Faculty of Paris, has repeated the experiment upon a bull, and has found M. Colin's assertions perfectly correct; from which circumstance he draws the conclusion that sugar is not formed *exclusively* in the liver. Facts like these show very forcibly that experimental physiology should be conducted with the utmost care; that all the sources of fallacy should be taken into account; and that no conclusions should be looked upon as physiological laws until they have repeatedly stood the tests of counter experiments.

The Medical School of Vienna.

We find, in a letter addressed by Dr. Purdy to the Editor of *L'Eco Médical Suisse* (March, 1857), the following particulars touching medical teaching at Vienna:—

The general hospital, containing 3,000 beds, is exclusively intended for clinical instruction. The wards are lofty and well ventilated, averaging from twenty-eight to thirty-six beds; but the diet is of an inferior kind. There are four subdivisions for Medicine, at the head of which are Drs. Oppolzer, Skoda, Von Raimann, and Helm; one

for Skin Diseases, under Hebra; one for Venereal Diseases (Sigmund); two for Surgery (Schuh and Dummreicher); one for Diseases of the Eye (Arlt); and two for Midwifery (Braun and Bartsch). There are, besides, two chairs connected with the hospital—one of Pathological Anatomy (Rokitansky); and the other of Forensic Medicine (Dlauhy).

The author of the letter considers Dr. Oppolzer as a very accomplished teacher, and extremely anxious to convey knowledge at the bed-side. Skoda is too fond of hypothesis, too sceptical as to therapeutics, and too much inclined to confine his attention to the mechanical play of organs. Hebra, continues the writer, has made good use of his splendid opportunities, and renders the study of skin diseases extremely attractive; but he is too dogmatical, indulges too much in sarcasm as regards his brother professors, and forgets that the labours of our forefathers are worthy of every respect. Sigmund is antagonistic to Ricord, and gives a two months' course on venereal diseases. Surgery is rather weak, and not to be compared to Heidelberg (Chelius), and Berlin (Langenbeck). The eye clinique is under the care of Arlt, who operates extremely well. Excellent opportunities are offered in the midwifery subdivision, where the student on duty is allowed to perform operations. Rokitansky is entirely relying on his assistant, and is getting indifferent to teaching. Young Jaeger is considered to be a worthy successor to his father, and is producing a magnificent atlas of morbid states of the eye seen through the ophthalmoscope.

Hæmostatic Douches in Operations.

M. GAILLARD, of Poitiers, France, mentions in *L'Union Médicale*, that he finds it useful during operations to direct a stream of water on the wound, by means of a tube connected with a jar filled with water, and placed above the level of the table. This may sometimes, perhaps advantageously, replace the sponging which is so necessary during operative proceedings, but may have several drawbacks, as wetting the patient, spouting water about the surgeon, &c., &c. Still it might be tried with a very gentle stream, precautions being taken respecting the discomforts just named. At Guy's Hospital this mode of cleansing has been long in use on the post-mortem table.

Bronzed Skin.

A NOTE was recently read to the Academy of Sciences (Institut de France) on the Relation of *Bronzed Skin* and Diseases of the Supra-renal Capsules, by M. Pirech ("Quelques faits à propos de la Maladie d'Addison.")

M. Pirech's conclusions from his inquiries are the following:

1. All cases of bronzed skin are not accom-

panied by lesion of the supra-renal capsules; and all the lesions of the supra-renal capsules are not attended by bronzed skin.

2. Bronzed skin is not in general fatal in itself; it is so generally only by complication.

3. It is due to an alteration and perversion of the pigmentum; and it is probable that it has sometimes been associated with disease of the supra-renal capsules as a mere coincidence.

Experiments with Amylene in France.

M. DEBOUT, editor of the *Bulletin de Thérapeutique*, well known by his experiments on the perchloride of iron and other new agents, has taken up Dr. Snow's discovery with much enthusiasm; and it may be said that the anæsthetic powers of amylene have been largely tried in the hospitals of Paris. M. Debout has experimented upon animals, and has administered the narcotic agent in numerous operations performed in the above institutions. The results have always been satisfactory. As to the time required for complete anæsthesia, M. Debout gives, amongst others, the following table of eleven cases:—

Cases.	Anæsthesia in Minutes.	Patients.
2	1½	Males of 25 & 28
3	2	" of 18, 34 & 35
2	3	" of 35, girl of 13
2	4	" of 23, girl of 23
1	4½	Females of 30
1	6	Girl of 13

One man, aged 62, of a very weak constitution, had prostatic calculi removed, and breathed the amylene for three quarters of an hour. M. Debout has read a paper on the subject of Amylene before the Academy of Medicine, which is shortly to be reported upon.

Professor Tourdes has published several articles in the *Gazette Médicale de Strasbourg*, and also presented a paper to the Academy of Sciences, on the administration of amylene. M. Tourdes's experiments in public practice are numerous; and, after detailing the phenomena produced by amylene, he offers the following propositions:—"I do not hesitate in asserting that amylene will prove very valuable with infants and young subjects; for we can depend upon—1, facility of application; 2, certainty of effects; and, 3, innocuous action. To these advantages may be added—1, the rare occurrence of nausea and vomiting; 2, possibility of producing at will slight or deep anæsthesia, transitory or lasting, with or without muscular relaxation; and, 3, undelayed waking up, without subsequent unpleasant symptoms. I would advise amylene for cases where anæsthesia of short duration is sufficient, for operations performed with rapidity, or for investigations bearing upon diagnosis; chloroform should be used when deep anæsthesia is required, as in the capital operations, when the surgeon should not be disturbed by the idea of the rapid waking of his patient.

A Monstrosity.

THE *Gazette* of Lisbon gives the description of a child presenting an almost unexampled monstrosity. His name is Feliciano Assompero, and he was born without any trace of upper or lower extremities, no rudiments whatever being observable. The boy is now twelve years old, is very intelligent, and has an excellent memory. He weighs about 30 lbs., is 17 inches high, and the circumference of the chest, on a level with the xiphoid cartilage, measures 21 inches. The thorax is covered with a thick layer of fat.

Reviews and Notices of Books.

The Decline of Life in Health and Disease, being an Attempt to Investigate the Causes of Longevity. By BARNARD VAN OVEN, M.D. pp. 300. London: Churchill.

MAY you live a thousand years, and your shadow never become less, are common modes of salutation in eastern countries. How far the above poetical aspirations can be realized, are examined at some length in the above work. After discussing the organization of man from birth to maturity, Dr. Van Oven speaks of the decline and duration of life. Both these chapters will amply repay perusal. The author next investigates the causes of longevity, while by the tables which he has compiled, it will be readily seen that a vast number of those persons who attained very old age, passed through their life remarkably free from disease. Originally strong constitutions, and hereditary tendencies, doubtless also greatly contributed to such results. It should, however, likewise be mentioned that few persons attained prolonged longevity who had spent a life of celibacy. On the contrary, many instances recorded in history had been even oftener married than once.

The author subsequently adverts to the mode of attaining old age. This portion of his treatise occupies thirty-four pages, and contains various sensible remarks. In our limited space it being impossible to give even an analysis, readers must peruse the original, and form their own opinion respecting the principles enunciated. The climacteric period of women, diseases of age, gout, cancer, affections of the urinary organs, and sanguineous system, are next investigated, whilst apoplexy and hemiplegia ultimately occupy attention.

In conclusion, the author expresses an opinion that it is much more in man's power than many generally believe to prolong his life, and preserve health with bodily vigour throughout its course, by following true hygienic laws, which ought consequently to be the study of every individual, as all will hence become happier and healthier, at the same time that they augment their mental powers and promote physical development.

An interesting Appendix closes Dr. Van Oven's book, in which numerous examples of very aged

persons are given; some were from 140 to 150 years of age; to which a table is added, containing seventeen cases who lived beyond that Nestorian term, and up to 200—namely, Jane Britten, reported to have died December, 1588, in Somersetshire.

The collecting together of the varied facts must assuredly have cost the writer much labour; and in now taking leave of his production, we can at least justly say it merits a place in the library of those taking an interest in statistical or analogous investigations.

Statistics of Insanity; being a Decennial Report of Bethlehem Hospital from 1846 to 1855 inclusive. By W. C. HOOD, M.D., Resident Physician, &c. pp. 121. Ordered by the Governors to be printed and circulated.

STATISTICAL investigations being now an established order of the day, and one of the best means not only for diffusing authentic information, but likewise for enabling students to extend their knowledge, while drawing important practical deductions, we hailed the appearance of the above work with no ordinary satisfaction. Its special object being to detail the chief features which characterized the movements of patients at Bethlehem Hospital during a period of ten years ending the 31st of December, 1855, many valuable data are thus brought before the profession. The facts now reported well deserve careful study, and although readers may not always agree in every deduction drawn by the author, the information supplied becomes not the less useful for psychological investigators, and those engaged in the treatment of insane patients. Being wholly based upon the extensive series of tables regularly kept at Bethlehem Hospital since 1843, we think Dr. Hood ought to have mentioned that the documents quoted were, in the first instance, arranged, and actually filled up during two years, by one of the governors of that royal establishment—namely, Dr. Webster; especially since the fact was so stated by the Lunacy Commissioners in their Report presented to Parliament in 1852, who said, "These valuable tables were originally prepared by Dr. John Webster, and appear to be drawn up with great care and attention." This omission should not have occurred, and hence the above quotation is now made to supply an existing vacuum.

When discussing the varied questions based upon, or supplied from the registers of Bethlehem Hospital, Dr. Hood divides his inquiry into sixteen different heads, in reference to each of which some very interesting disquisitions are appended. Into all the points the author has mooted, our limited space prevents us fully entering, notwithstanding all amply deserve consideration. According to Table I., 2729 curable insane patients were admitted during the ten years already specified. Of these 1663 were female lunatics, thereby showing mental diseases prevailed more commonly amongst women than men, or giving a ratio of nearly 60 per cent. increase; the proportion of

cures ranging upwards of 54 per cent., and the deaths 6.37 per hundred admissions. By Table II. it appears the most numerous entries took place in cases from 25 to 40 years old, especially amongst females; while more patients were cured from 20 to 22 than at any other period; but the largest number of deaths recorded were in cases from 35 to 40 years of age.

Some instructive statements respecting the domestic condition of the lunatics admitted during the period already quoted are contained in Table V. According to the figures given therein, exactly half the total patients received were married, amounting to 1364 out of the aggregate 2729 inmates under treatment, the majority of whom, or 819, were females. Whereas the parties reported single supplied only 1194 examples, which fact therefore indicates insanity as proving of more frequent occurrence during married life than otherwise, particularly when it is recollected that the actual number of unmarried individuals exceeds the number of the married throughout every grade of society.

Regarding the social position of the insane patients enumerated in Dr. Hood's recent statistical production, schoolmasters and tutors amongst the males, with governesses and dressmakers amongst the females, seem to have been more numerous, comparatively speaking, than any other class embraced by the tables now published. But that result cannot seem extraordinary, should an otherwise delicately-nurtured lady pass from unhappiness to misery, and from misery to insanity, while she occupies a situation in the family which is too often not so desirable as even that of many domestic servants. Again, in reference to dressmakers, including milliners and sempstresses, it also does not appear at all astonishing if they are frequently driven mad through penury, trouble, and perhaps even remorse from misconduct, which may have been the case occasionally.

In subsequent paragraphs the author discusses at considerable length the apparent and assigned causes, as also the duration and form of mental disease affecting the patients placed under treatment, respecting each of which questions various interesting remarks are made. 'Upon none, however, has the author entered more minutely than in reference to the different causes usually assigned by relatives to have occasioned the patient's malady. The seventeen pages comprising Dr. Hood's ninth chapter will, therefore, amply repay perusal. Besides adverting to the number of attacks reported to have occurred prior to admission, with the state of bodily health manifested by inmates when placed under surveillance, the author next makes several sensible practical observations regarding the remedies which should be employed towards promoting recovery. Respecting bloodletting, he observes, there can be no doubt that experience has decided against general bleeding in insanity. Such condemnation, however, does not apply to local abstractions of blood, although even these moderate depleting measures are not often necessary. Shaving the head, and

applying pounded ice afterwards to the scalp by means of a bladder, is much recommended; but the author thinks the douche, or shower bath, is very liable to be followed by reaction and renewed excitement. Purgatives prove powerful means of depressing the system, and the employment of antimony in cases of insanity, is spoken of as a practice both general and effectual. Opium constitutes a most important agent, and one which becomes continually required, although hyoscyamus may be indicated in certain idiosyncracies; nevertheless, in Dr. Hood's opinion, morphia or opium, alone, or in combination with antimony, and with various stimulants, remedial or dietetic, will answer every requirement.

While acknowledging, without any special reservation, the intrinsic value of the volume now cursorily placed under review, and the useful yet varied data collected by the author, and which must have cost considerable labour to arrange, previous to laying before the profession, still, we would assure Dr. Hood that he has not turned the important materials at his individual command to the best and fullest account. With all respect be it spoken, there ought to have been more of the compiler, and his own deductions derived from the figures thus supplied, with fewer observations respecting Esquirol, Prichard, and Thurnam. Having such an ample repertory of facts as the archives of Bethlehem Hospital indubitably supply, it would have been an easy task for a physician possessed of the author's experience and knowledge to have augmented considerably the remarks contained in the present publication, more especially as the various observations and valuable inferences deduced by the writer indicate how well he was qualified for any similar undertaking, and which we hope to see more completely realized by Dr. Hood on some future occasion.

Rain and Rivers; or, Hutton and Playfair against Lyell and all comers. By Colonel GEORGE GREENWOOD. pp. 195. London: Longman and Co.

We do not feel ourselves competent to deliver a dogmatic opinion upon an abstruse point in geology; but we shall not be backward in offering one as to the style in which such a subject is discussed in Colonel Greenwood's tractate. Our judgment upon this is, that it is a decidedly bad one, and neither befitting the author nor the dignity of science. We regret this the more, believing that Colonel Greenwood is well acquainted with the argument he here so "dashing"ly manages.

The Journal of Psychological Medicine and Mental Pathology. Edited by FORBES WINSLOW, M.D., D.C.L. New Series. No. vii., July, 1857. London: Churchill.

THE present number touches upon some very important topics, not the least interesting amongst which is the question of the actual increase of insanity in modern times,—a subject alluded to in

several of the articles. The first "communication" is from the Editor, on Neglected Brain Disease and Suicide; and this is followed by one on the Demon of Socrates. The review of Mr. Herbert Spencer's Psychology opens the field to those fond of metaphysics. We can most safely recommend the present portion of this well-known journal to our readers.

The Elements of Materia and Therapeutics. By JONATHAN PEREIRA, M.D., F.R.S., and L.S., &c., &c. Fourth edition, enlarged and improved. Vol. II, Part 2. pp. 680. London: Longman & Co., 1857.

THE appearance of the nearly 900 pages before us, constituting the second revision of that portion of Dr. Pereira's great work left unfinished (as regards its third edition) when he died, completes the fourth issue of the "Encyclopædia of Materia Medica." On the first publication of this portion of it, under the new joint editorship in 1853, we felt it our duty (in a former number of *THE LANCET*) to animadvert on the rather loose and unsatisfactory manner in which the important service intrusted to such well-known names had been performed. We are happy to have it in our power now to say the same editors have greatly improved, and have given evidence of such labour and interest in their work as to make us regret we were deprived of similar testimony on the appearance of the previous edition. The articles on Chloroform and Cod-liver Oil have been rewritten, and several additions have been made to the history of the alkaloidal principles, some of which are for the first time described in the present volume. In illustration of these remarks, we may refer to the notices of conia, cotarnine (a product of the decomposition of narcotine), opianine, opianic acid, papaverine, hellebrine, aconitine, berberine, &c. Short accounts of "amylen" and pepsin will also be met with.

"To the pharmaceutical compounds described in the previous editions, many new preparations have been added from the Pharmacopœias of Norway and the United States. The editors have also transferred to the volume various new articles of materia medica but little known in this country, which have been incorporated with the third American edition by Dr. Carson."

"The volume has been separately paged, and is provided with a separate index. Some articles which more appropriately belonged to other parts of the work have been transferred to the other volumes."—p. iv.

As the whole work now stands, the fourth edition comprises upwards of 2500 pages, including 586 articles of materia medica, of which 198 are contained in the first volume, under the head of Mineral Substances, and 388 in the two parts of the second volume, comprising Vegetable and Animal Substances. The whole is illustrated by 478 engravings. We need scarcely say that—taking the treatise as a whole—we coincide in the judgment, "that in copiousness of details, in

extent, variety, and accuracy of information, and in a lucid explanation of difficult and recondite subjects, it surpasses all other works on *Materia Medica* hitherto published," and that the lamented author has here succeeded in transforming the substance of an unpretending Course of Lectures into a complete Encyclopædia of *Materia Medica* and Therapeutics.

God in Disease; or, the Manifestations of Design in Morbid Phenomena. By JAMES FOULIE DUNCAN, M.D., F.R.C.P. Ireland, &c., &c. Second edition. pp. 323. London: James Nisbet and Co. Dublin: G. Herbert, 1857.

THIS is a work of considerable merit, in which questions of great interest are discussed in a serious manner, but without any affectation of superior sanctity on the part of the writer—an error into which medico-theologists are very apt to fall. The application of the theory of design to disease, pain, and their modifications, has been made with considerable ingenuity; in short, the book is suggestive and interesting, and will repay an attentive perusal.

Aids during Labour. By J. R. PRETTY, M.D. London: Churchill, 1856.

THIS little work consists of a series of essays on some important points in the practice of midwifery. The points especially insisted upon by the author are—1st. Promoting effective contraction of the uterus *during* labour, by the application of the hand during the pains to the abdomen. It is contended that this mode of applying pressure excites muscular action, and secures more effectually than any other method full and regular uterine action, tending to obviate the subsequent hæmorrhage. We fully agree with the author in his estimate of the value of this practice when applied in proper cases. He appears, however, to be unaware of the extent to which this plan has been admitted as a recognised practice. Thus at p. 47, he says, "supporting the uterus—except by Drs. Lee and Murphy—and aiding it have not previously been advocated." Now, it is impossible that the reasons for the practice, the *modus operandi*, and the utility of it, could be enforced more clearly and more philosophically than by Dr. Power half a century ago. It is also advocated in the "Dublin Practice of Midwifery," and it may be said that there is hardly any principle in midwifery better understood.

Dr. Pretty extols a compress of his own contrivance to maintain contraction of the uterus after the expulsion of the child. We fully admit that this compress has at least as much merit as has any other of the numerous inventions of the same kind. But we should not feel disposed to abandon the intelligent and safe hand for any mechanical substitute.

There are some excellent and very practical

observations on the use of chloroform, of stimulants during labour, of ergot and opium in hæmorrhage. The subjects of post-partum hæmorrhage, of retention of the placenta with hæmorrhage, are treated in some detail, in which we regret that we cannot follow the author.

The work is well written, and evidently reflects the mind of a careful, philosophical, and observant practitioner. He may, indeed, in some instances have overrated the originality of some of his views; but we can conscientiously recommend the book as one deserving perusal by every practitioner of midwifery.

A Month at Kissingen, and Analytical Table of the Mineral Springs, with passing notices of Cologne, the Rhine, Frankfurt, Wurzburg, Heidelberg. By an ENGLISHWOMAN. pp. 167. London: Longman and Co. 1857.

THOUGH "an Englishwoman" is sparing of novelty as well as of quantity, she has written a diary in an easy and unaffected manner. We read the work almost all through without stopping, and this, when the subject matter is the rather trite one of a trip to a German *brunnen*, is confessedly something to its praise. Those invalids in search of repose, health, and mineral water, cannot do better than visit Kissingen, and take "an Englishwoman" as their guide.

Vacation Thoughts on Capital Punishment. By CHARLES PHILLIPS, A.B., one of Her Majesty's Commissioners of the Court for the Relief of Insolvent Debtors. London: Cash and Co.

THIS question has been repeatedly discussed; but old ground has been so generally occupied by the disputants, that we venture to place the argument on a new footing. The argument of Beccaria, the Italian jurist, whom Mr. Phillips follows throughout, is the following:—That as no man has a right over his own life, so he cannot delegate this right to the State, and that, consequently, the State cannot lawfully deprive a subject of his life. This argument, we are well aware, will not be admitted by those who contravene the theory of a compact, and imagine the authority of the executive magistrate to descend, like the image of Diana, direct from Heaven. It is not, however, to such (if such there be in the nineteenth century) that we address ourselves. But, nevertheless, the statement of this question, as enunciated by the great jurist, is, we apprehend, an unfair one; and, be it remembered, it is the foundation of all Mr. Phillips' arguments, or rather the maxim behind which he intrrenches himself, whenever he feels his numerous instances of judicial failure, though well adapted for drawing tears, wanting in that coherence and significance which might in some degree warrant an inductive argument. It is well to recur to first principles in treating this subject, because it is hardly possible to reason calmly upon its details,

even were the process of induction from the heterogeneous mass of statistics as easy as it would be, were the various cases so similar to each other as to furnish some excuse for the hasty character of the reasoning evinced in Mr. Phillips' treatment of the subject. That no man has a right over his own life, we readily allow; and that no man, nor body of men, can delegate to the State what is not their own to transfer is, we think, equally certain. But to us it seems that what society in this matter delegates to the State is not the right over life, but the right of self-defence. The ultimate object of punishment by human laws is—first, to deter from, and prevent, crime; secondly, to reform the offender. The individual who, in the absence of the law's protecting arm, defends his life by taking away that of an aggressor, is deemed on all hands to be justified in the act. Ought the State, to which appertains the right of defending society, not only from external aggressions, but from internal disorder and violence, to be denied that which is conceded to the individual who exercises it in an exceptional case of necessity? Are the occasional errors of the law to be magnified by the medium of excited passions until they appear fundamental defects in its principles, because the results of error may, and justly do, excite the sympathy of the humane? As well might the law forbid men to defend their persons from nocturnal violence, lest an accident, caused by the darkness, should prove the death of an innocent man. And is the harrowing nature of such an accident to be considered to strengthen the argument against the right of self-defence? Yet such is the course adopted by Mr. Phillips. To this point converge his multifarious and horrifying cases of mistaken verdicts, errors in judgment, and innocent sufferers on the scaffold. Surely the theory which in its diffidence of human judgment would paralyze the arm raised in defence of life or limb, will not command the assent of intelligent men. Perhaps it will be said that the man who defends his life by violence does so to *prevent* the murderer's act; while the law, unable to repair what it did not foresee, and could not prevent, *avenges* itself on the criminal. But the question is, whether the law *does*, by its punishments, *prevent crimes similar to that which it could not prevent*? If this be so—and the failure of the experiment of the abolition of capital punishments in *this country* can alone prove the negative—the two cases we have compared are perfect in their analogy. Since, then, the State possesses the right of defending society from the violence of its particular members, the question of capital punishments must be placed on the ground of expediency.

On *this* question we do not now pass any judgment, as our present object is simply to show the fallacy of an argument which would place a bar in the way of future investigations of the effects of capital punishments, by imbuing the public mind with a prejudice against its lawfulness under any circumstances.

Lives of British Physicians, and now, for the first time added, Lives of Merriman, Halford, Paris, Chambers, and Clutterbuck. With four Portraits. pp. 416. London: Tegg & Co., 1857.

It is now some years since the first edition of the collection of biographies before us was published, and from the estimation in which the work has been held by the profession, we are surprised that we have had to wait until the present time for a new issue. It is here at last, however, and greatly improved by the addition of the lives of the most mark-worthy physicians who have lately passed to their last resting-place from their active duties amongst us. The biographies of these latter are fully equal in truthfulness and concise detail of facts, as also in style, to the best of their fore-runners. They add considerable interest to the work, not only from the reputation of the men descanted on, but from the fact that we ourselves have lived amongst them, can recall their features, and bear personal testimony to the worth here delineated with truth and deservedness. In building up the memoirs of Halford and Paris, the editor acknowledges the services of Dr. Munk, the librarian of the College of Physicians, while for the other three the editor alone is responsible. Our own sympathies lean towards Dr. Clutterbuck, about whom there was a manliness of character, truthfulness of purpose, and honesty of aim, that was "worthy of all acceptance." Well may his biographer remark, that his life was

"Fraught with lessons of instruction, and affords an admirable example of the success which results from industry, perseverance, and probity. He was unassisted by family influence, fortune, or connexions, and had few patients amongst the higher classes. He never received an honour from the College of Physicians, having declined the only one offered him—a fellowship at an advanced period of his life. But he was highly respected and even venerated by the public and the profession as an example of an excellent and practical physician, who had attained the highest reputation by his own talent, industry, and spotless character."—p. 413.

We regard the editor's *critique* of Dr. Clutterbuck's intellectual character as really masterly. From it we can only make room for the following extract:—

"He might be considered the model of a debater on medical subjects; never for a moment carried away into statements which he could not substantiate, and always preserving the full command of his temper, he spoke with a deliberation and a clearness which have been seldom excelled. The style of his address was rather cautious than energetic, and he was perfect in the choice of his language. Indeed it would be difficult to conceive a more finished composition of words than fell from the deliberate lips of Dr. Clutterbuck in a debate. He was so easy to follow, and so clear in his statements, that there was no possibility of misunderstanding him, and the short-hand writer who had to take his speech would, if he took it correctly, have no faults in style or composition to correct."—p. 412.

There are few books more worthy of being placed in the hands of the novice in our art than this collection of Biographies of British Physicians.

The Metaphysicians; being a Memoir of Franz Carvel, Brushmaker, written by Himself; and of Harold Fremdling, Esq., written and now republished by Francis Drake, Esq.; with Discussions and Revelations relating to Speculative Philosophy, Morals, and Social Progress. pp. 416. London: Longman and Co. 1857.

Of all the strange, unaccountable, weird books we ever sat down to read, this is decidedly the strangest, most unaccountable, and most weird. Franz Carvel, the hero of the first memoir, appears to have read German metaphysics, and more particularly Immanuel Kant's "Critique of Pure Reason," until his brains have become addled, and he sees visions. Vision No. 1, is England one hundred years ago; and, vision No. 2, is England one hundred years hence. Connecting these imaginings, is an account of the present and Franz Carvel as conditioned by present modes, usages, and education. The main object of the memoir seems to be to show that we have decidedly improved upon our ancestors in the science of sociology, and that we are about to experience still greater improvements. We strongly demur, however, to the crazy scheme which would convert society into a collection of hypertrophied model lodging-houses.

The second memoir is supposed to be an autobiography written by a person who has been partly the victim of errors in moral education. Harold has been at school as a wealthy foundling, and the pedagogue designs to unite him to his daughter. Harold has a kind of duality of character. Aspect the first is intellectual, passionate, refined, morbidly sensitive—terribly æsthetic. Aspect the second is gross feeding, sleep, and animal gratification generally. As time progresses, the hero goes abroad, and forgetting his pure-minded little sweetheart at home, falls into the embraces of an Italian she-devil, who reduces him to the condition of a used-up satyr, and then exults in the ruin she has worked. A more filthy spectacle, in a moral point of view, than the erotic and semi-consumed human cinder Harold becomes, could hardly be imagined. One question upon reading such a book is, *Cui bono?* We see no purpose to be served by such writing, which could not be far better obtained by something less shocking to our moral sentiments in the way of incidents.

The volume before us is quite unfit for general perusal, and the philosophy is too diluted to suit the strong palate of a really well-furnished mind.

Annual Report of the Dorset County Lunatic Asylum, Forston, for the year 1856. London. 1857.

Report of the Bethlehem Hospital for 1856.

THESE reports are replete with valuable information, and are well drawn up. The statistical tables in the first of them are worthy of careful perusal. Table No. 4, in the second, shows the admissions, cures, and deaths in Bethlehem Hospital for the last thirty-six years, from 1821 to 1856 inclusive. Dr. Hood deserves the thanks of the governors.

Statistical Notes on some of the Diseases of India. By EDWARD JOHN WARING, Esq., Madras Medical Service.

A REPRINT from the third volume of the "Indian Annals of Medicine." The author does not attempt even to sketch a complete statistical history of the diseases of India, but confines himself to notes on the following diseases—viz., Fevers, dysentery, hepatitis, cholera, beri-beri, dracunculæ, tetanus, and puerperal tetanus, as it appears at Bombay, and leprosy. His deductions merit the attention of those who have devoted their attention to diseases of hot climates.

Royal London Ophthalmic Hospital, Moorfields. Report for the year 1856. London. 1857.

THE report shows the hospital to be in a very flourishing and satisfactory condition. The number of patients treated during the year 1856 was 10,665, whilst in 1855 the number was 9974, and in 1854, 9850. During these three years there were 1255 various operations, including 574 for cataract alone; and of the 30,489 cases seen during that period of time, inflammation of the various tissues of the eyeball, in both old and young, was represented by 17,990 cases; whilst as many as 1548 were wounds of the eye. This speaks much for the labours of the staff of this valuable institution.

A Voice from the "Goodwin;" or, a Plan for the Prevention of Further Casualties on the Goodwin Sands. By GEORGE CHOWEN. London. 1857.

THE author's plan is to encompass the entire area of these dangerous sands with buoys, each one to be furnished with a large sonorous bell, at intervals of one to three hundred yards. These are so constructed as to ring the bell on the slightest motion of the waves, and thus warn the mariner. Those interested in this subject—and who is not?—should possess themselves of this brochure. The author deserves the thanks of the community for his proposal.

A Treatise on Cancer, and its Treatment. By J. WILSON FELL, M.D. of the University of New York. pp. 95. London: John Churchill.

THE magic influence of mystery—the *omne ignotum pro magnifico*—was never better illustrated than in the history of Dr. Fell's proceedings in this country. Several months ago it was whispered here and there that a wise man—"a regular doctor"—from a distant land, had come amongst us in possession of some wonderful secret, by which he could accomplish the most extraordinary results. He could at least cause the most malignant tumours to perish in his hands—to separate from living tissues which they could no longer invade. Nay, he possessed a specific omnipotent against even the constitutional effects of these diseases. Well, these murmurings ex-

tended amongst a certain class of medical men—their names are given by Dr. Fell: we spare them, for a day of repentance is at hand—till at length a footing was gained by the Cancer Curer in the wards of a metropolitan hospital. The great “mystery or medicine man” of the West had reached the pinnacle of glory. In return, he promised to reveal the secret, which, in the first instance, he was prepared to sell to the nation, if the national representatives could have been induced to buy it. It were well perhaps that it had been otherwise; for our knowledge of Dr. Fell’s secret has been dearly purchased by the sacrifice of the fair fame of one of the London hospitals. The secret such as it is shall be given at length, in Dr. Fell’s own words, which are as follows:—

“Many remedial agents were tried without producing the desired effect, and all efforts to cure the disease were for a long time unsuccessful, and apparently hopeless, until I heard of a root used by the North American Indians on the shores of Lake Superior, which the Indian traders told me was used by them with success in these affections. It is a perennial plant, known commonly amongst these Indians by the name of puceoon, but from the red, blood-like juice that exudes from it when cut or bruised, is called by botanists the *Sanguinaria Canadensis*. It grows in great abundance in the wild forests and plains of the far West; indeed, in early spring the ground in many parts is covered by its large white blossoms. Such a plant, with showy snow-white flowers, would naturally soon attract the attention of the savage; but when he found that whenever this plant was injured or a leaf-stalk broken, it exuded a copious stream of a blood-like fluid, he immediately considered it as sacred and a great medicine. And no doubt some poor squaw, suffering from this dreadful disease, was the first who applied it, after having tried all the simple herbarium of the uneducated savage without success, and then in despair, applied the bruised bloody pulp of the white flowering puceoon. This extraordinary plant, although unknown to civilized man as a remedy for cancer, has been long well known as a powerful emmenagogue and alterative, and, as such, has been admitted into the Pharmacopœia of the United States; and it is a question well worth consideration to ascertain how far its connexion and power over the uterine functions has to do with its influence in destroying the peculiar cancerous diathesis existing in most cases.

“According to Wood and Bache, ‘*sanguinaria*, when applied to a fungous surface in the form of powder, acts as an escharotic. It has been given in typhoid pneumonia, catarrh, pertussis, croup, phthisis pulmonalis, rheumatism, jaundice, hydro-thorax, and some other affections, either as an emetic, nauseant, or alterative, and its virtues are highly praised by many judicious practitioners.’”

“The first experiments made with the puceoon were upon ulcerative surfaces, and although requiring months of continued application, yet the removal of the tumour was effected, and the patient cured. It was then combined with various substances with a view to hasten its action; but none appeared to do so well as the chloride of zinc, for with this compound large ulcerated tumours were removed in a few weeks with comparatively little and in many cases no pain; at the same time obtaining by absorption and by the internal use, all the good effects of the puceoon.

“The next object was to adapt the treatment to non-ulcerated tumours; and, as a preliminary step, the cutis was destroyed by nitric acid, and the paste applied; but it was found that the eschar produced by each application was so thin that it would require a long time to remove a large tumour.

“Incisions about half an inch apart were then made through the eschar, avoiding the living tissues, and the paste spread upon strips of cotton inserted into them daily; this plan succeeded admirably, and is believed to be entirely original.

“It was also found that although the action of the puceoon was much hastened by the addition of the zinc, yet it was slow enough to allow its complete absorption, thereby enabling it to exert its peculiar constitutional effects, and at the same time removing the diseased mass in a few weeks.

“The compound generally used is prepared according to the following formula:—

℞ *Sanguinaria Canadensis*, ℥ss vel. ℥i.

Chlor. Zinci, ℥ss vel. ℥ij.

Aquæ, ℥ii.

Pulv. Sem. Tritic. Hibern., q. s.

Mix, and form a paste the consistence of treacle.

“Sometimes the *Sanguinaria* is used in the form of a decoction, by boiling it down in water from four to two ounces: in this case no water is used in mixing the paste.

“The proportions of the *sanguinaria* and zinc are varied in different cases according to the effect produced.

“This is spread upon strips of cloth, cotton, or wool, and inserted daily into the incisions; generally in the course of two to four weeks the disease is destroyed, and the mass falls out in the course of ten or fourteen days afterwards, leaving a flat healthy sore, which generally heals with great rapidity. This treatment refers chiefly to those cases that are well-marked, or that have made some progress in their destructive career; but we often meet with other cases of an incipient nature, where the disease, although fully developed, is still in a quiescent or dormant state. In such cases I often accomplish a cure by means of absorption, giving no pain to the patient, and not injuring or removing any important part, as the breast, which must occur if the first mode of treatment is resorted to. Not only is this of use in incipient cancer, but I have seen it of much use when applied to the lymphatic glands, which had become secondarily affected. In such cases, I remove the part primarily affected, *en masse*, by means of the *sanguinaria* paste, applying at the same time the following ointment, spread upon cotton, over the enlarged gland or secondary tumour. This ointment is composed as follows (and called the brown ointment):—

℞ Sulph. Zinci, ℥vi.

Sanguinaria, ℥ij.

Myricæ Cerifera, ℥j.

Extr. Opii (aquæ).

Extr. Conii, αa 3 vi.

Ungt. Cetacei, ℥vi.

Mist. et fiat ungt.

“In conjunction with this preparation, I use an ointment of the iodide of lead, generally applying each twelve hours alternately. The following is the formula used:—

℞ Iod. Plumbi, ℥j.

Glycerine, ℥j.

Ungt. Cetacei ℥ij.

Fiat ungt.

“With a steady persevering use of these two ointments I have often dispersed incipient tumours, which I have no doubt were cancerous.

“These are the external means of treatment I employ, which, although in themselves eminently successful, yet I am not content with them alone, but also pay particular attention to the general health, ordering a nourishing and sustaining diet, besides giving internally the puceoon in small and repeated doses. A remedy that exerts so much influence when applied externally, must be exhibited with caution, I therefore seldom exceed half-grain doses, three times daily. This is given in the powder or decoction, in the former cases I give it either alone or combined with the sixteenth or twentieth of a grain of the iodide of arsenic, and one grain of the extract of ciuta made into pill; or, if given in decoction, I generally combine it with the fluid extract of taraxacum.

* “Wood & Bache’s ‘United States’ Dispensatory,’ p. 623.”

"The ointment of the sulphate of zinc I have been in the habit of applying, with marked success, in cancer of the womb. Unlike the Vienna paste, it can be applied not only with safety, but impunity, as it does no injury to the adjoining tender parts.

"I have also used these preparations with marked benefit in cases of lupus, both exedens and non-exedens; indeed, I have never known a case in which the judicious use of these remedies have failed.

"Indolent ulcers have long been an opprobrium to the profession from their intractable nature; in such cases these applications are most efficacious, as I have known phagedænic and indolent ulcers of long standing to be speedily and permanently cured in the course of two or three weeks. In such cases I have often accomplished a cure by using the sanguinaria alone, but even then I find much benefit in using the combination as described in the above formulæ.

"Having given in detail the mode of preparing and applying the remedies it only remains to state the results of the treatment as compared with the removal by the knife; and in doing so I shall employ the tables generally adopted by writers upon the subject—viz., that from eight to eight and a fraction out of every ten cases operated upon return within two years; whereas it is found, that out of every ten cases treated by the puccoon, only about three return in the same time.

"The first patient suffering from cancer and treated with the puccoon of whom I have any knowledge is still living, in the enjoyment of good health, although the disease was removed fifteen years since.

"Another advantage of this plan of treatment is, that a great number of cases that no surgeon, however fond of the knife, would venture to operate upon, can be treated with a fair prospect of success."—pp. 56-63.

Such is the sum and substance of *all* that Dr. Fell has to say, and which amounts to this; that chloride of zinc, to act as an efficient escharotic, requires to be more diligently and decidedly applied than surgeons have generally been disposed to use it. No one for an instant will suppose that the sanguinaria has anything to do with the operation of the really active agent. The story of the discovery of this wonderful remedy reminds us of our old friend the picture of the North American squaw with the long tresses, displaying the efficacy of the "Balm of Columbia," which also comes to us, oddly enough, from "the shores of Lake Superior." Turning, then, for a moment to the action of the chloride of zinc applied as Dr. Fell recommends—a practice not by any means so original as he wishes to be believed—we find it capable of removing tumours in certain cases in which the knife is not available. This operation it performs slowly and *most painfully*, as we have ourselves witnessed in more than one instance; so painfully, indeed, that we should never, for a moment, recommend the use of this caustic in any case in which the knife could be used.

There is not a particle of evidence in Dr. Fell's book to show that his remedies control in the slightest degree the constitutional operation of the cancerous diathesis. All his "selected cases" date from July, 1855—a period far too brief to prove that the disease may not return. Nay, his very first case proves that it can and does return. Thus, a lady came under treatment in July, 1855; in September the fungus came away; in October the disease "again re-appeared." In February, 1856, the ulcer had healed; but we learn that on

"April 16th, Dr. Pettigrew and I called on Miss W—

to-day and found her very ill from the rheumatism. I have some grave fears as to her recovery, as there appears to be some pulmonary difficulty connected with the case. The breast is quite well, and the cicatrix scarcely observable.

"April 29th.—Miss W— died this morning at seven o'clock."—p. 67.

There is very little doubt that "the pulmonary difficulty" here mentioned was cancer of the lungs or pleura. Like examples exist amongst others of the "selected cases." It is needless to quote them. The readers of *THE LANCET* know full well that cancer is not to be cured by local treatment, and as to its constitutional management we are just as wise as we were before Dr. Fell came amongst us. We are indisposed to criticise further the author's cases. We should like to read some of the non-selected cases. What might they not tell us, when a selected "case" shows how an unhappy young lady remained under Dr. Fell's treatment for a year for disease of one of the jaw-bones, and how at length the disease having increased, she had to submit to an operation, and died the following day? Another selected case tells of a lady having a moderately-sized cystic tumour of the breast, which might have been removed in two minutes, and the wound healed in ten days, who remained three months under the escharotic treatment, Dr. Fell, "in making his repeated incisions, meeting with numerous cysts, which were opened," &c.—a bit of morbid anatomy which prevents our forgetting to say that Dr. Fell appears profoundly unacquainted with pathology.

His description of the varieties of cancer consists of a most meagre compilation from two or three of the more familiar treatises on the subject. In fine, let us say of Dr. Fell that we do not believe him to be so silly as to suppose that his remedies really possess the powers which he would desire the public to believe. The whole affair, connected as it has been with the reputation of one of our metropolitan hospitals, is anything but creditable to the parties concerned.

The Comet and its Consequences. By A MIDDLE BACHELOR. London: Tallant and Allen. 1857. pp. 31.

THE public mind has been for the last few weeks in a state of great excitement respecting the prophesied collision between the expected comet and our globe; and it is to be feared that, with pre-disposed individuals, apprehension and terror may have had a very prejudicial effect on their intellectual powers. We are surprised that more has not ere this been done to allay exaggerated fears; we have therefore read this clever and elegantly written pamphlet with much pleasure. It is evidently the work of an able mind, and the matter is so handled as to ring, with great skill and nicety, astronomical formulæ and calculations within the comprehension of those who have paid but little attention to a noble science. This pamphlet is likely to do much good. Its tone, throughout is devout and reverential.

CLINICAL RECORDS.

FRACTURES OF THE THIGH IN OLD PEOPLE.

THERE were two cases, a short time back, in the Royal Free Hospital, of fracture of the neck of the femur, internal to the capsule, which attracted our attention, both in elderly women, one of whom was the nurse of one of the male wards, aged fifty-seven, who slipped and fell on her left side with much force, and broke the neck of the femur, of which she exhibited the usual symptoms. Mr. Cooke had the limb put upon a double inclined plane, and she was kept quiet for six weeks. On the seventh week, she was allowed to walk with crutches, and in a little time after got on without them; and, on examination, not the slightest difference could be traced between the two limbs. Complete union had satisfactorily occurred, of a bony character, as there was no shortening, and the various motions of the limb were perfect. The second case, also under Mr. Cooke's care, was in a woman, aged sixty-three, who was feeble and infirm, and who fractured the neck of the femur by slipping off the kerbstone—the manner in which it very commonly occurs in old people. The symptoms of fracture were more marked than in the other case, the shortening being greater, and the crepitus very distinct. The limb was put up in a Liston's splint, and a liberal allowance of wine and diet were ordered. No union occurred here, as in the first instance, and she was ultimately discharged without the power of using the limb at all, as is not uncommonly the case. As all surgeons know, bony union very seldom occurs in these cases, the majority of them uniting by ligament, or, as in the older of the two patients, not at all. That is the reason why it is recommended not to put these cases in splints. With regard to the first, the fracture was believed to be partly within and partly without the capsule, and hence its satisfactory result. The symptoms also in her were those of slight displacement.

It does not always follow that because a patient is very old, union of the broken bones will not occur. We saw a man, eighty-four years of age, in University College Hospital, in April last, under Mr. Erichsen's care, who broke his thigh-bone two inches below the trochanter, and union had occurred under the use of long splints for a few days at first, and then the starch bandages. The fracture arose from a fall, and our wonder is that the neck of the bone did not break; but the violence was most probably direct.

GOOD RESULTS OF DONOVAN'S SOLUTION IN PSORIASIS.

THE cutaneous affection in this case had existed only three months, upon a lad, aged eight years, in the London Hospital, being a most extensive eruption of psoriasis guttata, running into

lepra; in fact, the two were quite distinct in many parts. The lad is a coalwhipper by occupation, and has at the best of times fared but indifferently. On admission, he was put upon the liquor arsenicalis, but not the slightest improvement ensued under its use. Mr. Curling therefore changed it for Donovan's solution, from two to three minims three times a day, conjoined with alkaline baths every other day. The success of this plan of treatment, within a short time, has been most satisfactory, the eruption having completely disappeared in some places and dying away in others. The case, to be sure, is a favourable one in many respects for treatment, having existed but for a short time and occurring in a young subject. Donovan's solution, which in chemical language is known as the "liquor hydriodatis arsenici et hydrargyri," requires no recommendation from us; its value in certain skin diseases is indisputable.

CONGENITAL CYST IN THE AXILLA.

TORTUOUS and, we may say, varicose veins were noticed in particular parts of the body of an infant at St. George's Hospital, who had a congenital cyst in the left axilla. Thus, enlarged veins were noticed running, from the arm towards this tumour, and also up the side of the chest towards it. A very large tortuous vein occupied the back of the left hand. Besides these, there were two or three small cutaneous nævi, of a red colour, beneath the tumour itself. Mr. Hewett thought the tumour either a single large or a congeries of small cysts, and on slitting it up on the 18th of June it proved to be the former, with a large vein distinctly seen, occupying the bottom of it. It was allowed to remain as it was. Mr. Hewett said he had two methods in view for producing obliteration—either by a small seton through the cyst, which would produce inflammation and its consequences: or, laying open the cyst as he did here, and dressing it with lint, forming a suppurating wound which would heal up. The last plan he thought the best. An interesting question arises here, as to the real nature of this tumour. Two explanations have been given of its mode of growth. Mr. Cæsar Hawkins believes that these cysts are in some way connected with a nævus, and originally there must have been one here, which, however, became obliterated by the growth of the cyst. Mr. Coote, on the other hand, believes that certain portions of these nævi become blocked up and get isolated, and form either a series or one large cyst, the nævus itself becoming obliterated.

HORRIBLE DEFORMITY FROM LUPUS VORAX.

THE following is the picture presented by a short man, Joseph P—, aged seventy years, at the Cancer Hospital, on the 26th of May, 1857:—A large

but healthy-looking ulcerated cavity on the right side of the nose and face, extending right back to the fauces, the upper teeth being exposed. The entire nose to the right of the septum is destroyed, as also is the cheek, malar bone, and lower eyelid, although the eye is perfect; fully the right half of the upper lip is gone. The disease seems to have stayed itself at the alveolar ridge of the right side of the upper jaw, but has destroyed all the structures at the back of the affected part of the face, thus giving it a frightful appearance. Withal there is no offensive discharge, and the surfaces of the sore look healthy. It commenced fifteen years ago as lupus, and was arrested ten years since at St. Bartholomew's Hospital, by Mr. Stanley and Mr. Wormald, by, we believe, the chloride of zinc. It broke out again a year afterwards, and slowly and progressively destroyed the various parts described. He was ordered a pint of porter and two glasses of wine daily, and plenty of good food; carrot poultices every night to the seat of disease, and during the day a lotion of an ounce of the muriated tincture of iron to a pint of water, to get the surface if possible to skin over; this lotion to be very assiduously applied. On the 8th June we found this man much improved; the ulcer seemed drier, and was healing up at the margins; the roots of two or three of the teeth were exposed through the alveolus. His general health was better. A fortnight later the disease seemed to be stayed, and the healing up of the margins, so far as could be expected, had ensued. On the 7th July a healthy pink replaced the deep red colour.

A second case of lupus, but of the variety known as non-exedens, we saw on the 9th June in a female aged twenty-nine, of nearly two years' duration, which had destroyed the skin of the whole of the middle of the face and the end of the nose. It at one time resembled a honeycomb, and is now nearly healed up, under general tonic treatment and the use of a black wash (one drachm to a pint of lime water). She had been under treatment since April, 1856.

CARCINOMA MAMMÆ.

THE history in this case was somewhat obscure, because the patient, a female aged forty-four years, in Guy's Hospital, thought she had a lump in her left breast for five or six years, although it escaped her notice till five months ago, when her attention was drawn towards it. There was not the slightest retraction of the nipple nor discoloration to lead one to believe the tumour to be cancer; it rolled freely under the skin, and the skin was not affected. It had some of the peculiarities of an innocuous growth, yet the breast rolled too much for it to be an adenocoele or a mammary glandular tumour. The lump, however, felt very hard, and Mr. Birkett removed it on the 30th June, when it proved to be true carcinoma in its early stage. The woman was in perfect health, and it was a singular circumstance that she should

have had it so long without especially observing it.

AN EFFORT TO PREVENT TIBIAL DISEASE EXTENDING TO THE KNEE.

THERE can be no doubt, as we have often pointed out, that a well-directed effort, timely made, will sometimes prevent the extension of diseased action to a neighbouring articulation, and this is the more necessary when it exists in the vicinity of such an important joint as the knee. An example of the kind came under our notice at Guy's Hospital on the 14th, of a young and healthy man, who received a blow at the inner side of his right knee last Christmas, its force being exerted upon the inner side of the right tibia. The bone has been constantly painful ever since, and has resisted all treatment, the joint itself being perfectly healthy. But there can be no doubt whatever in the mind of any surgeon, that it is most likely to become implicated in a short time from extension of the disease in the tibia, and entertaining this view, Mr. Cock made an opening in the skin, a little lower down the tibia, and with a small trephine removed some bone close to the affected and partly carious spot, the seat of pain. The discharge which will ensue will have the effect of drawing the disease downwards, and in this manner effect a cure, as through this opening the crumbly and loose fragments of bone, which will become disintegrated, will be sure to pass. This plan of treatment has really proved most effectual of late, numerous records of cases appearing in our "Mirror" from several of the hospitals. Blisters and counter-irritation may do very well for a little time, but eventually something more important is required. Trephining the bone and removal of the disease by suppuration affords a means of permanent cure.

DEGENERATED AXILLARY GLANDULAR TUMOUR.

Two years ago one of the right axillary glands began to enlarge in a boy, now fourteen years old, in University College Hospital, and gradually increased till it attained the size of a small flattened orange. There was no sign of degeneration, nor of malignancy; it was movable, lobulated, and from the somewhat strumous appearance of the lad, Mr. Erichsen believed it to be glandular. It was removed by him on the 24th of June, and found to consist of one large, and some smaller glands; the larger, on section, was composed of gland tissue, with tuberculous matter infiltrated throughout, undergoing the process of degeneration, and possessing a yellowish-cheesy appearance. This would have gone on to suppuration, and might have caused much trouble if allowed to remain. It therefore becomes necessary, for many reasons besides the one mentioned, to remove these tumours, and this seems to be the adopted rule. Last year Mr. Erichsen removed a tumour very similar to this one from the axilla

of a girl, and our records afford abundant evidences of the extirpation of glandular enlargements.

VALERIANATE OF AMMONIA IN NEURALGIA.

For some time back, Dr. O'Connor has been prescribing, with success, the valerianate of ammonia in cases of neuralgia under his care at the Royal Free Hospital. It has also been given in a few cases of epileptoid disease. In one case of paralysis of the facial nerve which did well, there was considerable pain along its course, sometimes of a very excruciating character. The valerianate of ammonia was administered with benefit, and in a very short time the patient got well. This remedy has been freely used in the Parisian hospitals, but especially at the Salpêtrière and the Bicêtre; and Dr. Tuffnell, Professor of Military Surgery in Dublin, has also tried it, and found it eminently successful.

CASE OF EXCISION OF THE KNEE IN A VERY YOUNG PATIENT.

This was upon a little boy aged four years and eight months, in the Westminster Hospital, whose knee had been injured in Scotland while traveling with his mother, which injury was followed by inflammation and abscesses in various places around the joint, with subsequent fistulous openings. Mr. Holt looked upon excision of the joint here as the only course likely to prove of service, and performed the operation on the 30th of June, saving the patella in the anterior flap. A slice was taken off the lower end of the femur, which, when detached, permitted a piece of necrosed bone to drop out of a cavity in the outer condyle, which, curiously enough, had formed a sequestrum in that situation, similar to two or three instances which we have recorded on previous occasions. The cavity was, however, well gouged out; a slice of the tibia was removed, as well as much diseased soft material, and the leg was put up in a Price's splint. Since the operation the little fellow has gone on without a single bad symptom, and no doubt a most excellent cure will be accomplished. Mr. Holt's previous case of excision in a woman, performed the week before, is likewise progressing most favourably.

In regard to the age of this child, we may remark, that it is the earliest but one in which this operation has been attempted in any of the London Hospitals, although Mr. Butcher, of Dublin, in his memoir on "Resections of the Knee-joint," mentions cases in which it has been performed at four and a half, five, six, and seven years. The earliest age was four years, and that was a case in which Mr. Fergusson performed resection of the knee on a boy on the 16th of December, 1854. The condition of one of the condyles in Mr. Holt's little patient we hope will not interfere with the curative process.

TWO CASES OF EXCISION OF THE HIP-JOINT.

It was but the other day we saw this operation performed by Mr. Hancock, at Charing-cross Hospital, upon a boy ten years old, who, we learn, is going on very well. On the 27th June Mr. Bowman, at King's College Hospital, also excised the hip of a child five years old, but the subject of disease of the joint for two years. The disease had run its course, and the joint was almost ankylosed by firm tissues, but fixed at right angles to the trunk; sinuses also were present behind the joint, discharging considerably. It appeared to be a case eminently favourable for removal of the diseased bone. This was accomplished under chloroform, when the head of the bone was found to be almost entirely gone, partly from absorption and partly lying in detached pieces in the cavity of the acetabulum—a feature of some interest. These loose fragments were removed, and the acetabulum scraped. The horizontal ramus was found to be bare of periosteum, and the great femoral vessels were distinctly felt during the operation. Mr. Bowman remarked that the head of the bone had not been dislocated here, but the limb had got in a bad position, and that there was a chance of the child's recovery, although the disease of the pelvis was extensive. Bone, however, may be bare, and not in a state of necrosis. This child was placed in a Heath's swing for supporting the entire body, and is going on well. We hope to revert to this and Mr. Hancock's case again.

On the 7th of July the head of the femur was excised by Mr. Holt, at the Westminster Hospital, from a child six years old, who had been in the hospital for six months, with swelling of the joint, abscesses, fistulae, &c., discharging up to the present time. The head of the bone could be felt through one of these openings. It was presumed there was no perforation of the pelvic bones, but in the course of the operation the acetabulum was found much diseased and not perforated. Excision was performed by one incision in the line of the femur, and another running backwards from it, the head of the bone being sawn off with a Butcher's saw. The acetabulum was carefully freed from disease by the gouge. The little patient has been going on well since the operation.

EXCISION OF THE KNEE-JOINT, AT ST. MARY'S HOSPITAL.

On the 15th of July, this operation was performed on a delicate girl, fourteen years of age, at St. Mary's Hospital. Her knee was affected with disease in childhood, from which time she has been an inmate of almost every hospital in London, and frequently dismissed as incurable. An effort was made to get the limb ankylosed in St. Mary's Hospital, but as her health was about to give way, resection was performed by Mr. Walton. There was no fistulous opening, the

joint was somewhat enlarged, very tender over the cartilages, and the case seemed one of the most favourable for the operation which has come under our notice. Two or three slices of each bone were removed to effect perfect adaptation. All the cartilages were ulcerated, and, in some places, completely gone. The patella was removed because a large portion of it was diseased. There was much venous oozing after the operation, which we set down to the unnecessary application of the trephine, a proceeding not at all required in resection of the knee, and which we have not seen before used in any single instance. The leg was carefully put up in a Price's splint before leaving the theatre.

ANCHYLOSED KNEE; EXCISION OF THE JOINT IN A SINGLE WEDGE-SHAPED PIECE OF BONE.

THE explanation of this is at once afforded when we state that the joint was firmly ankylosed by bony union, and, to a certain extent, flexed, in a girl, whose knee had been diseased for the last ten years, the disease beginning in the bones, proceeding slowly, and likely ultimately to destroy the patient. She had been a great sufferer, ankylosis had ensued, but she was convinced the disease was not cured, and came up to town to see Mr. Fergusson, stating that amputation had been advised, but her wish was to have the joint excised. He thought it a proper case for that operation, and performed it on the 18th of July. He remarked, that a patient had a better chance of life by the operation of excising the disease of the knee-joint than by amputation, an opinion, he said, which other surgeons had come to besides himself. Ample experience had now proved (in upwards of 100 cases) that death was not so likely to happen.

The operation here differed from that we had been in the habit of seeing. Most generally there is no ankylosis; but as the joint was firmly ankylosed here, a thick wedge-shaped piece of bone was removed in the same manner as that recommended by Dr. Rhea Barton, of the United States, in joints in this condition. The wedge here comprised the fused bones entering into the articulation, and permitted of the most perfect apposition of the cut surfaces. If the knee had been perfectly sound, this operation would have been perfectly justifiable according to the views of Dr. Barton; but as it was diseased also, it was rendered the more so. We hope this case will do equally as well as the others.

RESECTION OF THE ELBOW IN THREE CASES.

THERE were two cases at University College Hospital of disease of the elbow-joint which were submitted to excision by Mr. Erichsen on the 8th of July, one in a girl, the other in a middle-aged man. The girl was ten years old, and her left

elbow had been diseased for the last eight months. Fistulous openings were present on the outer side of the joint, which were freely suppurating, and associated with swelling. The shape of the swollen elbow, together with its general appearance, gave the true characteristic form of elbow-joint disease. A longitudinal incision was made at the back of the joint, with a short transverse one running at right angles to this, towards the outer side, and with a Butcher's saw excision of the ends of the bones was accomplished, all being diseased, the head of the radius but slightly so. There was a quantity of plastic material about the joint, which had all the appearance of strumous degeneration. The elbow of the man was not so much swollen as that of the girl, it had been diseased nearly three years, bare bone could be felt through fistulous openings, and there was no doubt whatever that the joint was implicated. For the last two or three months he had suffered much from it; there was a good deal of mobility, but no grating about the joint, and it often happens as every practical surgeon knows, that there is more disease present than the external appearances would lead one to suppose. The left arm was also implicated in this instance. The same incisions were made as in the previous case, and excision accomplished with the use of the same saw. All the articular structures were diseased, and most of them in a state of pulpy degeneration.

We have seen this operation practised a great many times lately; every patient appears to be doing well. On the 7th of July, the day before the above operations were performed, Mr. Hillman, at the Westminster Hospital, excised the elbow of a boy three years and a half old, which had been diseased for nine months, with caries of the bones, thickening and infiltration of the soft parts, and fistulous openings. Excision was effected by means of a single longitudinal incision, and the diseased ends of the bones sawn off, the wound being then closed with interrupted sutures. This child is doing very well.

INJECTING ABSCESSSES WITH IODINE.

THE abscess was present in the right lumbar region, and had been existing some weeks, quite unconnected with bone, in a nervous-looking young man in the Royal Free Hospital. It was evacuated by Mr. Cooke with a trocar and canula on the 6th of July, and injected with diluted tincture of iodine. We saw the same thing done by Mr. Erichsen, at University College Hospital, on the 15th of July, upon a little boy, six years of age, who had scarlet fever twelve months ago, followed by typhus fever, and disease of his right hip-joint, with the formation of an abscess below it. It was tapped six weeks ago, a quantity of matter let out, and the sac of the abscess injected with the pure tincture of iodine. It was repeated on the 15th of July, when we found that the secretion from the pyogenic membrane had become

much diminished. When his hip-joint was first affected, he had three issues applied, and it seems to be cured; he can stand firmly on his foot and leg, and walks with the aid of a stick. The abscess has again partly filled in Mr. Cooke's case.

TREPHINING THE TIBIA FOR ABSCESS.

CASES are now and then met with of a more or less constant aching pain in the bones—the tibia especially—which resists every kind of treatment, and if occurring in private practice, leading the patients to believe the surgeon does not understand the true nature of the disease. This pain very frequently may depend upon a deep-seated abscess in the osseous structure, and at times is associated with great constitutional disturbance. But instances are met with where an abscess has been suspected, the bone trephined, and no pus found; free suppuration has, however, followed, and a perfect cure been accomplished.

On the 28th of May, a perfectly healthy-looking boy had the upper and anterior part of his tibia trephined, at St. George's Hospital, by Mr. H. C. Johnson, for a suspected abscess. His general health was good in every respect, but about three weeks before, he was admitted as a patient, his principal symptom being extreme pain in the head of the tibia, not altogether constant, but very severe indeed at night, the disease commencing five years ago, with pain most of that time. The boy described the pain to be like that of toothache, and had not had any of the constitutional symptoms of the formation of abscess, but the head of the bone was enlarged. A crucial incision was made under chloroform, the bone trephined to the extent of three-quarters of an inch, and the piece of bone withdrawn, on examining the deep-seated portion of which some erosion was found; and on introducing the little finger into the head of the bone a distinct cavity was felt, which contained a little matter, thus verifying the correctness of there being an abscess, which must have been situated between the epiphysis and true bone structure. The hole in the bone was plugged with lint; free suppuration ensued, it will gradually fill up, and a cure, it is hoped, will be accomplished.

We have recorded several instances of the successful application of the trephine, and in two or three no matter was found, which did not interfere with the progress of cure. There are two or three very interesting and instructive preparations in the museum of St. George's Hospital, which illustrate the subject of trephining bone, and are well worthy careful study. The profession is greatly indebted to Sir. B. Brodie, who, we believe, was the first to introduce this excellent mode of practice, which has been followed out by many recent observers.

LIMITED CENTRAL NECROSIS.

A HEALTHY looking girl, in University College Hospital, about nineteen years of age, had suffered from enlargement of the middle of the left tibia for eight years, with pain more or less continuous, but chiefly nocturnal. The bone seemed to be treble its natural size, and the pain was confined to one spot. Such a case as this Mr. Erichsen remarked, with intermitting pain, and a tender spot on the surface of bone, is common to three different states, namely, abscess in bone, central necrosis, or else to chronic osteitis, producing general hypertrophy. A fourth condition might be mentioned—cystic osteitis, which is very rare, and of which there was an example in this hospital on a former occasion. In regard to the question of diagnosis, it was one of little consequence, as the treatment is the same in all—namely, perforation of the bone by trephining. He thought it was not a circumscribed abscess, because it is generally found in the cancellous ends of bone; here the swelling is in the shaft: then, again, in circumscribed abscess, the bone around is generally sound; it is not so here. Of the other two conditions, hypertrophy and central necrosis, he thought it would prove the latter, within an osseous case. And so it turned out, for on removing a piece of bone with the trephine, it consisted of the outer shell of new bone, which came away quite clean; then a piece of white dry bone, from the interior, which was part of a sequestrum, completely filling the interior of the limited new shaft. The wound was filled with lint and allowed to suppurate, and the girl is doing well.

LARGE EXOSTOSIS OF THE FEMUR.

THIS was a case of very great interest, from the presence of a bony tumour, the size of a large orange, situated at the lower and inner part of the right thigh-bone, in close proximity to the knee-joint of a young man in the Royal Free Hospital, aged seventeen years, who was an omnibus conductor. It had been growing since he was six years of age, and latterly was enlarging and causing inconvenience, with some pain. Mr. Thomas Wakley considered the case one suitable for operation, and on the 15th of June chloroform was given, and an incision made over the tumour from downwards, and the surrounding structures kept asunder by means of curved spatulæ. This was particularly necessary, because it was partly covered by muscles, whose fibres Mr. Wakley did not wish to cut across. With the aid of small saws and the bone-pliers, he succeeded in removing the tumour, which was the size of an orange, and attached to the femur by a broad and somewhat flat pedicle. Some care was necessary in this important operation, as the great vessels were situated immediately behind the pedicle of the tumour, the pulsation being distinctly felt during the process of removal, as well as seen distinctly

after at the bottom of the wound. There was some bleeding, but no vessel required tying.

On examining this growth, its outer surface was covered with a light covering of cartilage, whilst its interior consisted of fat, possessing the usual characters of the medulla of bone. The boy has gone on most satisfactory, and will, we doubt not, make an excellent recovery.

COMPOUND COMMINUTED FRACTURE OF THE PELVIS; RECOVERY.

SEVERE injuries to the pelvis very often terminate unfavourably. We only recently recorded two striking examples, and this result is sometimes not alone due to the injury itself, but to the shock occasioned by the great violence producing it, such as a fall from a height. Now there is a case in the Westminster Hospital at this moment, under Mr. Holt's care, of a workman who was employed in a gas-factory, who six weeks ago fell from a height on to the right side, and sustained a severe fracture of the ilium of that side, with a large open wound, the fracture being of a comminuted character. The whole length of the finger could be thrust into the pelvis. He had all the usual accompaniments of such a severe injury, and yet when we saw him last, on the 9th June, we found him convalescent. Mr. Holt, we believe, found it necessary to remove one or two pieces of the broken bone; very free suppuration was established, and now there is a little serous oozing from a fistulous opening, with for the first time a little erythematous blush on the thigh below the wound, the tissues of which are indurated. That this poor man will make a recovery there is no doubt; but as to his enjoying permanent health is another question. We rather suspect he will be a future sufferer from necrosis of the iliac bone, more especially as the deep tissues surrounding it have been infiltrated with pus.

LARGE TUMOUR OF THE THIGH.

THE subject of this large tumour in the left thigh, midway between the knee and buttock posteriorly, was a woman in the prime of life, who was healthy in every respect, in whom it had been growing for six years. She was admitted into St. George's Hospital about a fortnight ago, under Mr. Tatum, who found the tumour freely movable, covered with superficial veins, very elastic to the feel, thus resembling a fatty tumour, but less lobular. There was no enlarged glands, and taken with the perfectly healthy appearance which was manifested, Mr. Tatum thought it could not be malignant. Chloroform was given on the 4th of June, when a single long incision was made over the growth, which was then dissected out. There were no adhesions to the surrounding structures, although some of the muscles were spread over it, and slightly adherent to its capsule. It did not

extend into spaces or between the structures as a fatty lobulated tumour generally does, but was smooth and oval in shape, and fully as large as an adult head. It partook somewhat of a cystic character; but on section at a distance it looked like the well known sarcomatous growth of Abenethy, but rather more yellow; on close scrutiny, however, it appeared to be gelatinous in one part, fatty-looking in another, and of a purplish-grey in a third. The gelatinous portion of it assumed the character of those tumours found in the breast and elsewhere. Mr. Tatum did not say it was malignant, but was rather disposed to believe it so; at any rate, he remarked it should be removed. The wound remaining was one of great magnitude, the edges of which were brought together by sutures, numerous vessels having been tied, for the hæmorrhage was rather free. Although the appearance of the tumour was so peculiar and mixed, we think it may not be malignant, and probably is an instance of degenerated fatty tumour, such as is sometimes seen; an example not very dissimilar we saw Mr. Fergusson remove at King's College, on the 21st of March, only it had been twenty years growing, and strange to say, occupied the same situation in the right thigh of an elderly female, otherwise in perfect health.

Since the above was written, we have learned that cancer cells and exudation corpuscles were found in the tumour, but we are happy to say, the patient has made a good recovery.

AMBUSTIAL CONTRACTION OF THE KNEE.

THE patient was a boy, in Guy's Hospital, who suffered from a severe burn of his left leg in early life, more particularly in the ham and lower part of the thigh, which, in the course of healing produced considerable contraction of the cicatrix, so that the knee was bent at an angle, and could not be extended. The gastrocnemius muscle also became contracted, and the boy walked upon the ends of his toes. There were thus two deformities to deal with. Mr. Birkett made up his mind to treat the contracted knee, so as to extend it, on one occasion, and divide the tendo-Achillis; on another, to remedy the deformity of the foot. The first was accomplished on the 16th of June, under the influence of chloroform, when a very long V-incision was made with the apex downwards, and the cicatrized tissues carefully dissected from subjacent attachments; when this was done, the point of the V-flap retracted upwards several inches, and the parts were brought together by the continuous, or Glover's suture. The contracted tendon of the biceps was divided, and the knee straightened. As is usual in these cases, all the tissues were found in a somewhat atrophic condition, the great vessels being smaller than natural.

REMOVAL OF THE UPPER JAW.

UNHAPPILY, this was one of those instances in

which medullary disease had attacked the upper jaw-bone on the right side, which formerly used to go by the name of medulla of the antrum. The patient was a most healthy, hale-looking man, forty years of age, a patient in King's College Hospital, with no disease elsewhere. The whole of the superior maxilla of the right side, in the course of but four months, had been converted into a soft, pulpy, medullary mass. The disease here, as well as elsewhere, Mr. Fergusson remarked, is of the worst possible description, so far as its results are concerned. It is a maxim in surgery to give the patient a chance, and it is extraordinary how individuals do recover, and remain perfectly well, after the removal of tumours which appear to be malignant. He (Mr. Fergusson) related an example in point, of a young man with polypus of the nose, which he removed two years ago. It returned in a brief period; he then slit up the nostril, and removed the entire growth from the inside of the nose and the antrum, and cleaned it out, so that nothing remained but hard bare bone. Now, that man has continued well to the present hour. In the present case of diseased jaw we anticipate evil, but hope it may do well. The patient was placed fully under chloroform by Dr. Snow, when Mr. Fergusson proceeded to perform his operation, slitting down the upper lip along the mesial line from the right nostril, which formed the entire extent of his external incisions. With the aid of small saws and curved and semi-circular forceps or pliers he succeeded in getting away the diseased mass, which included more than half of the malar bone; thus showing with what facility the flap of the cheek can be raised by the limited incision. After removing the disease, he used the pliers till he came on healthy bone, the back part of the antrum being found perfectly healthy. A good deal of blood was lost, but the hæmorrhage was checked by the actual cautery; and, finally, the edges of the wound on the upper lip were brought together by needles and sutures. This was done on the 27th of June, and the man so far is doing well.

REDUCTION OF A DISLOCATED SHOULDER.

THERE is as much to be learnt, sometimes, from an injury which we may say is of every-day occurrence, as from one of a rarer nature. Thus, on the 23rd we saw the most common form of dislocation of the shoulder—that downwards into the axilla—reduced under chloroform, by Mr. Skey, at Bartholomew's Hospital, by the use of the pulleys, extension being kept up for twenty minutes, when the cord was cut, and the arm suddenly extended outwards and upwards. This did not immediately reduce the bone, but it was accomplished by a little manipulation afterwards. The bone had been out six or seven weeks, and ten days before admission an effort had been made by a competent surgeon to reduce it, but without success; which Mr. Skey considered was owing to an effort not being previously made to break up

the new adhesions which had formed. This had been done two days before, and reduction was accomplished with the aid of the pulleys. Mr. Skey thought the case of interest, because the direct effort to restore the head of the bone failed, whilst the indirect succeeded.

Now, the various forms of dislocation are well understood by the student—viz., that downwards, into the axilla; forwards, underneath the clavicle and pectoral muscle; and backwards, on to the dorsum of the scapula; besides partial dislocations: but it is as well that he should be thoroughly conversant with the methods of reducing the most common form,—that downwards. These, in a few words, are: simple extension by means of a jack-towel or the pulleys; placing the heel in the axilla, or the knee in the same situation; or drawing the arm straight up by the head till the bone is elevated into its socket. There are, perhaps, other methods, such as reducing it over a door; but those enumerated are sufficient to mention, as suitable in recent dislocations. We have very commonly seen it reduced by the heel in the axilla, which is effected generally without difficulty under chloroform.

SYME'S AMPUTATION AT THE ANKLE-JOINT.

THIS was the case of a girl, about twenty-five years of age, with disease of the foot, which had resisted all treatment, and had recently made rapid progress, so much so as to involve the tarsal bones, and preclude the possibility of performing even Chopart's operation. Mr. Erichsen, therefore, performed amputation at the ankle-joint in the manner recommended by Mr. Syme, removing both malleoli, and at the same time cutting off a slice of the lower end of the tibia, as there was some disease of the articulating surface. The scaphoid and cuneiform bones were found the chief seat of disease, the soft tissues being thickened and infiltrated with gelatinous matter, so often observed in the vicinity of strumous joints. There can be no doubt the first abscess must have commenced in the series of articulations formed by the scaphoid and cuneiform bones, as they were so much diseased; the astragalo-scaphoid articulation was also involved, likewise the calcaneo-cuboid, but not to the same extent. Mr. Erichsen remarked that he wished to perform Chopart's operation on her first admission; but the progress of the disease was so rapid that his only resource left was to amputate through the ankle-joint. The anterior flap was necessarily short, in consequence of the disease in the soft parts. We have watched this case with interest. The stump is healing up very satisfactorily, and will, we hope, prove a useful one.

AN AWKWARD ELBOW EXCISED.

WHEN an arm has healed up from old disease,

and has assumed an awkward position, as was the case in a little girl at King's College Hospital, in whom the elbow had become ankylosed so that it was useless to her, the surgeon naturally considers what is the best mode of relief. The present case was one, therefore, of more than usual interest. There were several old cicatrices above the joint, and a fistulous opening at its outer side, and the ankylosis was bony. Mr. Fergusson made up his mind to perform excision. Although resection of the elbow is common enough in this hospital, it has not been done so often for a state like that in this case as for disease generally. In some cases when the disease is cured, the limb is left in such a position as to require excision; that was so here. The disease got well with the arm very slightly bent, or almost in a straight position. Amylene was accordingly given by Dr. Snow on the 27th June, when Mr. Fergusson excised the elbow, making a single long excision, and sawing off the ankylosed joint, which comprised the ends of the three bones entering into its formation. A section of the removed joint showed the complete fusion of the substance of the three bones into one another. Whilst doing this, he opened an abscess in front of the joint, which was not suspected, and matter spirted out with great force; it communicated with a piece of bare bone on the lower part of the humerus. By removing this ankylosed portion of the elbow, a new or false joint will be formed, which will prove of the utmost value to the patient.

INVETERATE STRICTURE AND ITS CONSEQUENCES.

DISORGANIZATION of all the surrounding structures, with numerous fistulæ in perineo, in the scrotum, in the thigh, and above the pubis, were the consequences of an old stricture in a man, aged fifty years, at Guy's Hospital, under Mr. Cock's care. This patient never passed urine properly, and had used catheters since he was eighteen years of age; but he had no surgical advice till about three years ago, when he received a blow in the perinæum, followed by urinary abscess in that situation, with urinary fistulæ. Since then he has been suffering constantly from a series of fistulous openings in the perinæum, which appears to be riddled with them; one has penetrated the scrotum, another the thigh, and others above the pubis, the result of infiltration at various times. All the adjacent structures are destroyed, and he passes only a small quantity of urine by the urethra. Mr. Cock made an attempt to get in an instrument, under chloroform, but abandoned the attempt; he then cut through the mesian line of the perinæum, dividing several of the fistulæ anterior to the prostate, passed a director which went right into the bladder, and on it a short straight silver catheter, which drew off the urine, and was left in.

TUMOUR OF THE LABIUM.

AN ulcerated prominent growth, the size of a

small walnut, which had been existing for some time in the right labium of a young woman in the London Hospital, was excised by Mr. Adams on the 25th of June. It resembled epithelial cancer, but was benign, and on a section, it was pronounced to be fibro-cellular in structure, the constitution of most of the tumours in this situation. At first sight, this might have been mistaken for an encysted tumour of the labium, but, as a rule, they are seldom found ulcerated. The last example of the latter which came under our notice was one of a female, aged forty-eight years, in St. Mary's Hospital, some months ago, who had an encysted tumour in the left labium, the surrounding parts being somewhat indurated, from repeated attacks of inflammation. It was carefully dissected out entire by Mr. Baker Brown, and proved to be a cyst the size of a walnut. The cavity was stuffed with oiled lint, and the patient did well.

These tumours in the labia sometimes cause a good deal of sympathetic irritation of surrounding parts, and when that is the case they should be removed. The patient of Mr. Adams had a large "mother's mark" on the right half of her face.

A MOST EXTENSIVE MOLE.

WE do not recollect to have seen such an extensive mole as was present on an infant of King's College Hospital, on the 13th. It covered the entire or greater part of the back, the right shoulder, and part of the breast and side, besides existing in spots on other parts of the body. It bore a resemblance somewhat to the skin of the rhinoceros. It was, however, of a mixed character, Mr. Fergusson said, of the mole, vascular nævus, and nævus maternus, and was in many parts covered with long hairs, such as are found on moles generally. It was truly a mole of great magnitude, and one of the most remarkable which it has been our lot to see. There are prominent projections at several parts, one of which had already been removed, and on this occasion Mr. Fergusson strangulated another, the size of an egg, on the back. The surface of the mole was of course too extensive to interfere with. The child's mother attributed this condition to the fact of a dog being thrown on her back whilst pregnant with the child. It would be an interesting point to watch this child's progress through life, and to observe whether this extensive mole will ever become the nidus of epithelioma or of cancer.

A POISONED FINGER.

WHILST fishing, an elderly man, on manipulating some decomposing fish, poisoned the middle finger of his right hand, through some slight wound. This produced inflammation and suppuration, with destruction of all the bones, requiring amputation, which was performed on the

23rd June by Mr. Holt at the Westminster Hospital. The head of the metacarpal bone was removed along with the finger, so as to produce a useful hand without deformity.

VARICOCELE.

AN instance in a young man at the Westminster Hospital, of varicocele existing since he was a boy, was treated by Mr. Brooke on the 23rd June, by applying two subcutaneous ligatures, which were to be allowed to cut their way out. A good deal of nicety is required to effect this, which Mr. Brooke accomplished, not with an armed needle, but a needle without an eye, and having a small hook to draw the thread through, care being taken to avoid including the vas deferens.

Medical Annotations.

"Ne quid nimirum."

ON Monday, June 30th, was commenced, at Edinburgh, the trial of Madeleine Smith, for deliberately administering arsenic to her paramour, on three several occasions, with intent to kill him. The revelations made during the ten days' trial were truly startling. This girl—handsome, accomplished, and moving in good society—after leaving her fashionable boarding-school, came home to Glasgow, and there, under the eyes of her parents—religious and respectable folks—entered into clandestine correspondence with a miserable little fop, and to whom she had been surreptitiously introduced; continued to receive his advances in opposition to her parents' commands, and allowed him to seduce her. Physically debauched, she now sank into a still lower moral depravity. She wrote obscene letters to him whilst encouraging the advances of another suitor. She wrote, spoke, and acted lies without hesitation or shame. Perceiving the danger of her position, she tried to get rid of her worthless lover by an assumption of coolness. Fearing the dastardly threat he made to reveal her letters, she next counterfeited a return of affection. The cooling of her love was the subject of a letter on Feb. 9th. On the 19th, and again on the 22nd, he suffered from symptoms of poisoning by arsenic. On the 27th she wrote to him as with renewed affection.

L'Angelier was a man of inferior station to Madeleine Smith. He seems to have been a vain and impulsive little coxcomb. Boasting much of his personal appearance, he evidently attributed to that the conquest he had made. He had means of obtaining arsenic. In 1852, and on several subsequent occasions, he confessed, without hesitation to using it. The symptoms of the two attacks above-mentioned were such as an over-dose of the drug, or too long perseverance in its use, would produce. Just such an excess is what such a being would commit in his anxiety to regain her affection by the good looks which had once won

her, and which he probably attributed, in part, to the use of arsenic for his complexion. Moreover, he had similarly suffered, on several previous occasions, before at all knowing the accused. We suggest this explanation of the cause of these attacks, as there was actually nothing to inculpate the prisoner on the charges; and the jury returned a verdict to this effect.

We next find L'Angelier threatening to expose her by exhibiting her letters. He had probably retained them for some such purpose, in case of her proving refractory; for on a previous occasion he had urged her to sign her name at full length. On the 18th of March she purchased some arsenic coloured with indigo, telling a deliberate lie as to the purpose for which she required it, but buying it openly and in the presence of witnesses. This was her third purchase of the poison, the first being a day previous to the first of the two attacks above referred to, and coloured with soot. On Friday, March 19th, she wrote inviting him to visit her after the family had retired. He could not keep the appointment, but on the following Sunday night was seen going towards her residence. At an early hour next morning he was attacked with violent symptoms of arsenic poisoning. He vomited to the extent of six or seven pints. He made no mention of any suspicion that he was poisoned. He died, and on a post-mortem examination twenty-seven hours afterwards, eighty-eight grains of arsenic were taken from his stomach, and a considerable quantity was found in the small intestines, in addition to what had been vomited, and that which, absorbed, had caused death. It was contended that an interview had taken place on the night preceding his death, and that then the prisoner had administered the poison in a cup of coffee or chocolate. A verdict of "Not Proven" was returned on this charge. It has been asserted that positive evidence of this meeting was all that was required to supply the link of proof necessary to establish her guilt, and this has been the opinion generally expressed by the leading journals.

But a little attention to the medical evidence will show that the occurrence of this interview may be granted without any such implication of the accused. Nay, more, it is almost necessary for the explanation of the subsequent events. We learn that the quantity of arsenic administered certainly amounted to two drachms, and Dr. Christison rates the quantity at one-third higher. Now, it is simply impracticable for any but a most expert chemist to suspend this quantity in a cup of coffee or chocolate without immediate detection. On the cessation of stirring, the arsenic rapidly falls to the bottom of the cup. If drunk slowly—a mouthful being taken at first, and then swallowed—the drug would similarly have settled in the interstices of the mouth, and there have rapidly produced local irritation, never complained of by the deceased. In fact, the only manner in which the presence of so large a quantity of arsenic can be accounted for is, by supposing it to have been washed down with copious draughts of fluid,

which supplied the large quantity vomited when the symptoms of poisoning ensued. This we need hardly say is totally incompatible with its covert administration by the prisoner. Moreover, she is not known or suspected to have procured other arsenic than that tinted with indigo or soot; yet neither of these colouring matters was detected on examination after death, though their presence was manifestly apparent in a dog made the subject of careful experiment. L'Angelier was shown to have had just that tendency to suicide which Martial defined to be the attribute of a coward. He had twice previously attempted his life. Who can say what may have been the effect of the defiance which the heartless jilt very possibly hurled at him? For assuredly nothing could have been so certainly disastrous to her as his death and the discovery of her letters.

On this trial the prisoner and two witnesses remembered distinctly reading in class, when at school, an account of the Styrian arsenic-eating and its effects on the complexion. They had forgotten other things, but the recollection of this pernicious teaching clung to them. It may be there are others who learnt the same lesson, and who have the folly to meddle with such dangerous drugs. This case many serve to them, or to others equally vain and rash, as a warning that such folly might subject them to be at any time dragged before a public tribunal, charged with murder, every incident of their foolish lives revealed, and every weakness or frivolity mercilessly exposed.

WHAT Sir Benjamin Hall has done with the ornamental water in St. James's-park he now proposes to do with that diluted sewer, the Serpentine. By its margin—on the exercising ground so appropriately named Rotten-row, considering the stench which emanates from the water—fashionable London takes its daily airings, and sniffs the delicate aroma arising from the admixture of Bayswater sewage with the drainings of Kensall-green cemetery; for “your water is a sad decayer of your whorson dead body.”

In water thus polluted 200,000 persons annually bathe; yet at its deepest part (for it varies in depth from one to forty feet) Sir John Rennie found, in 1849, from ten to fifteen feet of inky, putrid mud, which he described as a “laboratory of epidemic miasma.” Dr. Hassall also analyzed its water, and found it to contain “much organic matter—vegetable and animal—dead, living, and in solution.” The job will be an expensive one, but the advantage gained will more than compensate for the outlay. We trust that the suggestion first proposed in our columns—to fill the basin of the lake with water conveyed from the sea—will receive consideration. If the First Commissioner of Works succeed in carrying out his project, he will leave behind him a far more worthy memorial of his good works than any caricature in bronze would afford to posterity. If a monument were insisted on it might be ap-

propriately inscribed with two lines from Shakespeare:

“Men's evil manners live in brass: their virtues
We write in water.”

MISS JESSIE MERITON WHITE, a strong-minded lady, of very pronounced political opinions, who was recently lecturing in England on Italian emancipation, has been so unfortunate as to get into prison at Genoa, for interfering with politics; and has had the further mischance to find a champion in a certain George Morant, jun. Writing from Carrickmacross, to contradict the description of her arrest given by *The Times'* correspondent, this knight ab-errant becomes quite ecstatic as to the lady's high intellect and great philanthropy. He informs the public that politics had nothing to do with Miss White's mission, but that she, “with a moral courage worthy of all praise, after having endeavoured in vain to obtain an entrance into the medical and surgical institutions of England, with a view of obtaining her diploma, in imitation of the Misses Blackwell and others, proceeded to Italy, in the expectation of there meeting with a liberality in the acquirement of the requisite professional knowledge which she had been denied in England.”

If such really was the expectation of this poor deluded gentlewoman she must have been terribly hoaxed: but let that pass. We hold that the refusal of the British medical schools to receive her as a pupil was wisely resolved. We trust that the same course will be pursued wherever a woman, who fancies herself qualified for an M.D., because she has A Bee in her bonnet, seeks to enrol herself as a medical studentess; and to assume the academic cap and gown, far less becoming than the female articles of attire bearing the same names. For the request proves a lamentable deficiency of right judgment, the first essential in medical knowledge. We can fancy the outcry amongst the horror-stricken teachers and damsels, “fluttered like doves,” were any medical student with a nice taste for worsted work, or a natural genius for crotchets, to claim a right of attendance on the lectures at any college for young ladies. If there be any earnest and perfectly sane women who entertain the opinion that medicine is their mission, let them start colleges of their own. Let them not attempt to violate every feeling of decency and propriety, by unseemly attempts to join company over the dissecting-table and in the lock-wards of an hospital, with men having mothers and sisters, for whose sex they wish to retain respect. We are at a loss to understand what social position these female aspirants to medical practice would claim. They cannot marry, since urgent cases of disease would require attention, even though a kid-glove might be tied round their knockers, nor could a midwifery patient be deserted whilst Mrs. M.D. tended her own suckling babe. If remaining single their position would be one that we

should deeply regret to see assigned to any woman of high feeling or delicate nature.

THE models for a monument to the Duke of Wellington, now exhibiting at Westminster Hall, convincingly prove that we have English sculptors fully capable of shaping out in marble or metal fitting tokens of our appreciation of the high deserts of those to whom Fame has assigned far higher honour—a “monumentum ære perennius.” If it be true that

“Lives of great men all remind us
We may make our lives sublime,”

the statues of those erected in London further remind us that there is but one step from the sublime to the ridiculous. Of course, it is only through distrust of native talent that a foreigner was selected to design the hideous memorial obelisk erected at Scutaria in sorrowing recognition of the services of the brave men there interred. Equally of course it has been only this distrust, now shown to be needless, which delayed the erection of fitting memorials to those world-famous Englishmen, whose services to mankind far exceeded all the benefits collectively conferred by noble heroes caricatured in marble or bronze, and kings whose sole claim to be cut in marble was, that they were chips of the old block.

It may be easily surmised how great is the astonishment of foreign visitors on hearing that our metropolis contains no public statue of Bacon, Newton, Harvey, or Jenner. Our neglect to do public honour to the memory of the last-named benefactor of his race must, we fear, excite feelings near akin to contempt in the minds of our Gallic neighbours. For so high is the French appreciation of the value of the great discovery of Jenner that the Société de Science Industrielle has determined to erect a statue to him on the landing-place at Boulogne. The sculptor is M. Paul, and the work is to be inaugurated in 1858. The English continental traveller is not a very humble-minded or easily-abashed individual; but this delicate satire on our ungrateful neglect of the memory of the immortal Jenner, facing him as he lands at Boulogne, must assuredly sting even through his thick covering of self-complacency.

THE two last West India steamers have had numerous cases of yellow fever during the homeward voyage. The *Orinoco*, which arrived on Thursday week, was most improperly allowed to set sail with no less than forty cases on board. During her passage of thirteen days, seventy cases of fever occurred, of which twenty-eight proved fatal. The disease has played terrible havoc among the crews of the ships at St. Thomas, whilst the inhabitants of the island remain comparatively unaffected. It first broke out in

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April, and its ravages have continued ever since. Several correspondents have written, directing attention to the general belief entertained by well-informed people, that the prevalence of the disease amongst the shipping at St. Thomas, especially on board the steamers taking in fuel there, is mainly attributable to the bad arrangements of the wharf at which the coaling is effected. This is constructed of old rotten hulks, deposited in a pent-up corner of the terrifically hot and almost land-locked harbour. The wharf thus constructed is situated immediately beneath a high mountain, shut off from every breeze of the sea, and exposed to the emanations from a shallow bay of half-stagnant water, which occupies one side of the harbour. In such an unhealthy situation an immense quantity of coal is deposited, as this is the island where all the steamers obtain their supply. The vessels have to draw alongside the wharf; and though it is true that natives are employed to shift the fuel into the vessels, yet the prevalence of yellow fever on board the coaling ships, and its rare occurrence in the natty little Danish town on the opposite side of the bay, proves the necessity for some active interference on the part of the Steamboat Company. The changes which seem most requisite include the providing a more healthy coaling station, the establishment of an hospital for the sick, and the refusal to permit any steamer to sail with cases of yellow fever on board.

THERE recently died at Paris a famous French chemist whose reputation was at its zenith whilst the present race was still in swaddling clothes. Louis Jacques Thénard, having lived on to the ripe age of fourscore years, last week calmly ended his days, surrounded by

“All that should accompany old age,
As honour, love, obedience, troops of friends.”

He was the son of a poor provincial peasant-labourer, a condition of existence which, in the last century, very fairly represented impersonated poverty. He died a peer of France, and grand officer of the Legion of Honour. His father early recognised the genius of his son. Cheap as education is in France, it was only by the greatest parsimony he was enabled to defray the small cost of his instruction as an apothecary. And in this capacity the future Chancellor of the University of Paris practised for some years at an obscure village in Champagne. Here his talents attracted the notice of Vauquelin, the then famous chemist, by whose counsel he quitted the profession, went to Paris, and obtained an appointment as assistant-chemist at the Ecole Polytechnique. In 1802, he read before the Academy his first paper, “On the Combinations of Antimony with Sulphur and Oxygen.” In 1813, he published his treatise “On Chemistry,” in five volumes, a work which has since gone through six editions. He became a

member of the Academy, and professor of chemistry at the Ecole Polytechnique, was made Chancellor of the University, a peer of France, and received high rank in the Legion of Honour. His obsequies were celebrated with great pomp at St. Sulpice; the wisest and greatest men of the country reverently attending the funeral of one whose own exertions had raised him from the poorest to the proudest position in France.

MEDICAL men, like oysters, are not much to be valued without they can keep their mouths shut. As it is difficult for the practitioner to acquire, when young, so it is difficult for him to maintain, in garrulous old age, this reticence of the tongue. The gossips everywhere beset him; and that

"tall, long-sided dame,
But wondrous light, yelep't Fame,"

is constantly lying in wait to pounce upon his words and publish them to the world as profound secrets. To chatter about the ailments of patients is foolish and suicidal. But there is another evil, resulting from a too-long tongue, equally to be condemned and avoided. Jealousy, or some motive less worthy, occasionally induces a practitioner to utter words concerning a professional brother which no provocation can justify. An action for slander not unfrequently follows; and hence the character of the whole profession is lowered in the opinion of our discriminating British public, with its strong tendency to take a part for the whole, and to judge of a house by a brick. Thus it is that exposures such as were made in the case of *Trend v. Smith*, tried on the Oxford Circuit last week, degrade the dignity of the profession, and most unjustly bring disrepute on its members. In this case, two surgeons in Northamptonshire were plaintiff and defendant; and the exposures made reflected no great credit on either. The plaintiff acknowledged having forwarded his name to the "Directory" with the addition of a title (M.R.C.S.) which he did not at the time possess. The defendant was proved to have injured his opponent's practice by ruthlessly stigmatizing him as "an impostor and a swindler;" for which playful exercise of brotherly love he was condemned to pay £75 damages. It is to take cognizance of such lamentable cases as these, *inter alia*, that the establishment of a "Court Medical" is so needful, to prevent the dignity of the whole profession suffering from the ill-advised or unjustifiable conduct of individual members, to counsel, to reprove, and, if need be, to

"Condemn th' injurious deed, the sland'rous tongue,
The thought that meditates a brother's wrong."

"TAKE thee a wife, take thee a wife, and marry, marry, marry!" was the burden of the bells of Varennes, to which Friar John bid Panurge heark-

en—as related in Rabelais' account of that hero's matrimonial doubts. And to the distempered fancies of college fellows the self-same chime still rings out from many a tower on the classic banks of Cam and Isis, mocking their lonely lot. It is, in truth, full time that the absurd restriction of celibacy imposed on the fellows of colleges, and opposed to scriptural doctrine, to physiological teaching, and to the interests of society, should be abolished. There is no worldly reason for its maintenance, and Bishop Hall long ago proved ("Honour of the Married Clergy," p. 123) that there is no divine law which enjoins it.

This prohibition of the marriage of fellows originated in the savage prudery of Queen Elizabeth—certainly no impartial judge of such matters. The code was framed by Whitgift and other wise-Heads of colleges, who took good care to except themselves and their successors from the oppressive enactment. That its influence must in many cases have been injurious both to body and mind, no medical man, observant of the frailties of human nature, can doubt. For there is no class of men on whom such a prohibition could fall so heavily or so injuriously. A college fellowship is an academical honour to be attained only by years of toil, and by one content to

"Shun inglorious ease, and live laborious days."

Then, in the maturity of his life and vigour, the successful candidate is called on to ignore those feelings and affections which are common to all mankind, though not equally under the control of all, whether wise or simple; which, moreover, are broadly acknowledged to be part of our nature in the marriage service of the church itself. At the same time he is suddenly freed from that constant toil of brain which hitherto absorbed all his attention and focussed his thoughts to one object. For it is true now, as in the days of Ovid, that

"Otia si tollas perire Cupidinis arcus
Contemptaque jacent et sine luce faces."

If he rigorously respect the hard conditions imposed on him, wrong is done to society by removing from a sphere of usefulness one whose studious life has necessarily preserved him from enervating vice, from dissipation, or any of those excesses which we have too good reason to fear are amongst the sins of the fathers visited on the children. If he be "right earth," the old Adam still retaining its hold on him, and think to submit himself to the two masters whom no man can serve, then does he peril his own welfare in more ways than one. In very many cases his intellect, relieved from any further stimulus to exertion, runs to waste in a life of ignominious ease, and he lives, as Bishop Taylor says, "like the fly in the heart of an apple, dwelling in perpetual sweetness, but sitting alone."

A number of the fellows and members of the University of Cambridge are now energetically endeavouring to obtain a removal of this compulsory celibacy. With this object, a memorial,

bearing nearly three hundred signatures, has recently been prepared for presentation to the University Commissioners now engaged in considering many collegiate changes. We trust that their efforts may be crowned with success, and that the fellows may now be further privileged to wear the crown which the wise man has said that a virtuous woman is to her husband.

SHOULD any seventh son of a seventh son, fated to physic, and anxious to work out his destiny with due regard to propriety, endeavour to learn the social restrictions wherewith he will have to conform and to acquire a general idea of what is his particular duty to everybody, he will assuredly be astonished at the result of his researches. He will find this is a pie in which every one individually has a finger, whilst society in general nobly consents even to invert its dearest axioms for his particular benefit. He is by turns the willing ass, which it is impossible to overload, and the one labourer who is considered unworthy of his hire. He is the bridge that cannot be too much abused by those it has carried over. He is the pitcher which is always to be sent to the well, and never expected to break. Gossip assumes prescriptive right to discuss all his doings; from his religion to the tie of his cravat, from his domestic affairs to his method of treating disease; and Scandal "hints a dislike or hesitates a doubt," without imagining that there can be any impertinence or impropriety in so doing. If he refuse to give freely, without a *quid pro quo*, that knowledge which is his only means of subsistence, he is a churl. If he minister to the sick without bargaining beforehand as to his payment, then every quibble that the law can afford (and their name is legion) may be resorted to for the purpose of upsetting his claims, and be gravely allowed to weigh against him. We do not mean to assert that such things are of common occurrence; but a case tried last week in the Court of Common Pleas at Westminster proves that they sometimes happen, and illustrates in a startling way the legal view as to what manner of precautionary proceedings should be adopted by a medical man anxious to ascertain the probability of his services receiving their just reward.

The story of the trial ran thus: Mr. Atkyns, a general practitioner, was called upon to attend the three children of a woman named Pearce, who was apparently living decently and domestically with her husband. Having cured the children of an attack of scarlatina, he subsequently attended the mother through two confinements; and the welcome had scarcely been given to the last little stranger, when another and very unwelcome stranger (somewhat in the position of the hero in Kotzebue's play of that name) made his entrance on the scene. Then it was discovered that the father of the last two children was only the paramour of the woman, and that her original husband, the father of the children first attended,

had been absent for years in Australia. He it was who now suddenly reappeared, claimed from their mother his own children (those preserved to him by the care of Mr. Atkyns), and discarded his frail rib. The surgeon sent to him his unpaid account for attendance on the children during their illness, omitting all mention of claims for his other services; was finally compelled to bring an action to recover the amount, and obtained a verdict in his favour. It was proved on the trial that the absent Menelaus never denied the three children to be his, allowed his fickle Helen a sum sufficient for their ordinary support whilst he was away, and at once claimed their guardianship on his return. Now, as the woman, however deep was the dye of her own sins, did not give the children scarlatina, and could not pay for their cure out of what was acknowledged as only just enough to provide them with necessaries, therefore the verdict returned by the jury seems but just and reasonable in a common-sense view. However, a common-sense view and a Common-Pleas view are essentially different matters. For the case being again opened in that court, the Chief Justice decided against the surgeon, and reversed the decision of the jury, on the ground that the "wife, who was left in this country by the defendant, entered into an adulterous connexion with another person, who assumed her husband's name, and the plaintiff, a medical practitioner, supplied attendance and medicines to her. He was of opinion that there was no authority on the part of the wife to bind the husband in this case."

We need hardly mention that the children of the husband had no connexion whatever with the alleged adultery, nor can we see how their position was influenced by it. However, the fiat of the law, delivered by one of its highest dignitaries, has gone forth, and the conclusions to which this judgment leads are rather startling. For it is hereby defined to be the duty of a medical man, who wishes to avoid law-suits and obtain his fees, to inquire (when summoned to children urgently ill) whether the mother be married to the individual representing her husband, to inspect her marriage certificate, ascertain the date of her husband's departure when absent, and the time of birth of the children, who will probably be dead before he has acquired the information which alone, according to the latest legal authority, will give him the least chance of obtaining from anyone the most moderate remuneration for his services.

Miscellaneous Correspondence.

THE GLASGOW CASE.—THE MICROSCOPE.

[NOTE FROM DR. HASSALL.]

To the Editor of THE LANCET.

SIR,—In the course of perusal of the daily papers for some years past, it has repeatedly occurred to me to notice how often the truth fails to be elicited, and the ends of justice are defeated, in

consequence of the neglect to employ the microscope.

The Glasgow poisoning case affords an instance in point. Had the microscope been resorted to in this case, it is probable that information of a most important character might have been obtained, as I will now proceed to explain.

The cocoas sold in this country consist of mixtures of cocoa, starch, and sugar. Different makers employ different kinds of starch or flour; thus some use wheat flour; others potato or sago starches, &c.; and others, again, employ a mixture of two or more starches. By means of the microscope these starches may all be identified, and this even after the cocoa has been prepared by the addition of boiling water. Had therefore the ejecta and the contents of the stomach and intestines been subjected to microscopical examination, it is very probable that the starch corpuscles of the cocoa actually consumed might have been discovered, and if these on comparison were found either to differ from, or to correspond with, those contained in the cocoa used by Miss Smith, a highly important piece of information would have been procured, telling either in favour of or against the prisoner. Again, the microscope is capable of affording valuable information in cases of poisoning by arsenic, as to whether the arsenic was coloured, and the nature of the colouring matter used.

I consider it my duty to make known the above particulars, in furtherance of the ends of justice in any future cases which may arise.

I remain, Sir, your obedient servant,

ARTHUR HILL HASSALL, M.D.

Bennett-street, St. James's-street, July, 1857.

ARSENIC AS A COSMETIC.

To the Editor of THE LANCET.

SIR,—At the late trial of Miss Smith, in Edinburgh, the medical evidence regarding the effects of common arsenic, when applied externally, was rather unsatisfactory, arising, doubtless, from the novelty of the excuse put forth by the prisoner, and people being judiciously unwilling to experiment to the full extent required to settle the matter completely. The following statement may, therefore, be of use:—

In all pastoral districts, various substances are regularly employed for cleansing the wool and skin of sheep from vermin, &c.; and amongst others, common arsenic is largely used in the process of sheep-dipping, as it is called. Many sheep farmers use hundreds of pounds of arsenic annually for this purpose. In sheep-dipping, it is necessary to clasp the animals in the arms, close to the body, so that the clothes of the operator gets saturated with water holding arsenic in suspension, and some of the poison must unavoidably come in contact with the skin, the result being that it is well known to all who have seen the dipping process, that various eruptions on the parts most exposed, chiefly the arms and legs, of-

ten succeed this operation. I have frequently been asked to prescribe for these eruptions: sometimes they resemble eczema, but more frequently they are pustular, and large boils are not uncommon. With a knowledge of these facts, it is impossible to imagine a young lady washing her face and hands repeatedly in water, with upwards of an ounce of arsenic in it, with impunity; and the careful (so far as their faces were concerned) experiments of the medical men for the defence, in the above trial, must go for nought.

I am, Sir, yours, &c.

ROBERT CRAWFORD, M.D.

Peebles, July, 1857.

ARSENIC AS A COSMETIC.

To the Editor of THE LANCET.

SIR,—I notice in THE LANCET of Saturday last a letter by Robert Crawford, M.D., on the effects of arsenic applied externally, in which he shows a lack of knowledge of the subject on which he writes, or he must be aware that the arsenical solution used for the purpose of dipping sheep contains several other ingredients, and is not (as he would wish to induce the readers of his letter to suppose) a simple solution of arsenic in water. Arsenic is very sparingly soluble in water, and were it placed at the bottom of a vessel, and water poured upon it, very little indeed would be either dissolved or suspended.

I am, Sir, your obedient servant,

JAS. EDW. BELL.

Manchester, August, 1857.

To the Editor of THE LANCET.

SIR,—Miss Smith has had a fair and impartial trial. Now let the medical profession leave her alone. If arsenic is to be a subject of discussion, well and good; but I say, molest Miss Smith no longer. If she is guilty, woe be to her! if innocent, why should Dr. Crawford or Dr. any one else come down upon her?

Now, the difference between Miss Smith using water impregnated with arsenic as a cosmetic and the sheep-washer is this: the latter not only uses the water, but takes quantities of arsenic in his hands, and rubs it into the sheep, hence the eruption; the former used water, into which arsenic was put. Now, arsenic is dissolved very sparingly in water; consequently Miss Smith's supply to her face must have been very, very limited.

I remain, Sir, your obedient servant,

W. A. SPARLING,
Assistant-Surgeon, H.E.I.C.S.

August, 1857.

MEDICAL ASSISTANTS.

To the Editor of THE LANCET.

SIR,—Permit me to occupy a small space in your excellent journal for noticing a grievance, which weighs very heavily upon a most useful,

and also a most unobtrusive class of our profession—viz., the assistants. I refer to the periods when their very small remunerations are doled out to them; and I am the more induced to do so from having had brought to my notice very lately a most unhappy exemplification of the present system, in which a most intelligent and worthy young fellow, a fourth-year's man of a metropolitan establishment, entered upon the duties of a retail and prescribing practice, at the splendid salary of £30 per annum. For the last two years fortune had seemed to forsake him, and he became, from no personal fault, reduced in circumstances; the want of means crippled him, and his attempts to get even a temporary loan proved a failure. In this exigency, a feeling of pride or diffidence prevented him speaking unreservedly to his employer upon this subject; and although he had given every satisfaction at the end of his first month, he had yet the mortification of losing his situation (such as it was, where the work of a slave and professional acquirements were rewarded as are the services of a cook), simply because he did not "make an appearance" in accordance with his supposed position in society—I say supposed position, for what, Sir, can be a greater sham?

What I would propose is, that salaries should be paid *weekly* or *monthly*, instead of by quarterly instalments, as unless men be possessed of some ready means (which alas! but few are), when entering upon engagements as medical assistants, we can all suppose the distress and heartachings which arise, while anticipating a first quarterly payment. I am, Sir, obed'tly yours,

STUDENS.

Middlesex Hospital, August, 1867.

INDIAN MEDICAL APPOINTMENTS.

To the Editor of THE LANCET.

SIR,—You have from time to time published various letters from assistant-surgeons lately arrived in India, many of whom appear to have been disappointed in their expectations.

Many students look forward to the H.E.I.C.'s Medical Service as the end of their lives; and, as I found it very difficult in England to find out particulars as to pay, &c., I do not think the students in question would dislike knowing, as far as I can tell them, a few particulars as to money matters, &c. As well as the necessary qualifications as to age, diploma, &c., required at the India House, there is also a certain amount of money necessary for outfit and expenses of journey; and this, along with many other things, must be considered as the cost of an Indian appointment—and a very necessary item, too, to be considered, when it is remembered that the student has just completed a very expensive education. We will suppose the candidate to have been successful in obtaining an appointment at the most searching medical examination in England. He gets his uniform, &c., in the cheapest manner; it costs him £25 to £30. His other outfit will cost

him £30. If he goes overland to Bengal it costs him in passage £105, and extra expenses £10 or £12; if round the Cape, £80 or £70. He pays at the India House £5 for his introduction to the Town Major. So our assistant-surgeon *cannot* come to India under £150. How this sum may be obtained, if not possessed by an assistant-surgeon, is often a matter of difficulty, as he will be some time in India before he can pay off the principal.

On arrival here, he gets quarters at the general Hospital or Fort, and, when doing duty at the General Hospital, his pay is, Co.'s rupees, 225 per mensem; from which, for funds, &c., 55 r. are deducted, leaving 170 r. per mensem. His board and lodging cost him, exclusive of tea and all extras, about 53 r. And all bearers, palki hire and care, to be paid also.

On landing, he can obtain an advance of £20, to be repaid when he gets charge of a regiment or staff employment. An assistant-surgeon can always live comfortably here on his pay, and take the chance of staff or civil employment to save any money; and the question is, whether the certainty of a comfortable income, with a chance of good appointments, is worth the outlay? I think, in the present state of glut of medical men at home, and the miserable way in which many of them have to fight for their bread when first starting, Indian certainty of independence is worth the outlay. I am, Sir, your obed't serv't,

A VANS BEST, M.D.

Assistant-Surgeon.

Calcutta General Hospital, June 18th, 1867.

THE MARSHALL HALL METHOD

SUCCESSFUL IN A CASE OF DROWNING OF TEN MINUTES' DURATION, AND AN INTERVAL OF HALF AN HOUR BEFORE ITS APPLICATION.

To the Editor of THE LANCET.

SIR,—Allow me a short space in your valuable columns to lay before your readers another case, showing the incontestable value of the Marshall Hall Method, as compared with the old system.

As the vessel *The Sisters*, of Bude, was coming to anchor in the Bay of Clovelly, North Devon, R. W——, a seaman, aged twenty, was cast overboard by a flap of the jib-sail whilst in the act of stowing away the same during a storm. He remained in the sea ten minutes, and disappeared twice; just as he was about to descend for the third time, the captain of the vessel succeeded in throwing a rope round him, and hauling him on board; after which, half-an-hour elapsed in launching a boat and bringing him to me, on the sea-shore, half a mile from the vessel. *Instantly, and on the spot*, I adopted, in the presence of a large crowd of persons, the invaluable method of restoring suspended respiration in the manner laid down by Dr. Marshall Hall. The condition of the patient, cold surface, purple lips, dilated pupils, turgid and congested countenance; the wrist and other pulses of the body imperceptible; heart's action

not audible; extremities quite cold and of a livid hue—all of which symptoms are expressed in one word, apnoea (or asphyxia)—prove that we should on all occasions, have recourse to the Marshall Hall Method, even after the lapse of so long a period. In ten minutes my patient breathed feebly; in half an hour, on being asked if he were better (although he could not articulate), he raised his hand in token of the fact. I worked on, and in two hours and a half I had the immense satisfaction, after placing him in a warm bed, of conversing with him on the nature of his feelings, &c., during the process.

I am, Sir, very faithfully, &c.,

R. R. G. THOMAS, M.R.C.S.E.

Hartland, North Devon, July 31st, 1857.

THE SOLUBILITY OF THE DISULPHATE OF QUININE.

To the Editor of THE LANCET.

SIR,—The disulphate of quinine is generally administered in a liquid form, recourse being had to acid as its solvent. Occasionally spirits of wine is used, the salt being soluble to the extent of one part in 740 of water only; or according to the experiments of Bussy and Guibonot of one part in 265 of water. Alcohol of sp. gr. 0.85 will dissolve one-sixtieth of its weight. I am of opinion that glycerine should be adopted, as the best and most advantageous solvent for the disulphate of quinine; and I venture to affirm that it will be found superior to either acid or alcohol for that purpose. I have discovered that glycerine, slightly warmed, will dissolve more than one-twelfth of its weight of this substance, the solution remaining perfectly clear on cooling; but if more than nine grains per fluid drachm be dissolved the excess crystallizes out on cooling. An aqueous solution of glycerine dissolves little more than water itself, if a large proportion of water be added to the glycerine; and even a mixture of one part of glycerine and one of water will dissolve but a very small proportion of the quantity soluble in pure glycerine, but still I anticipate an ample quantity to make glycerine a valuable vehicle for this medicine.

I am prosecuting this investigation in connexion with several other bodies, such as aconitine, strychnine, salicine, santonine, veratrine, &c., &c.

I am, Sir, your obedient servant,

JOHN S. BLOCKEY,

Professor of Chemistry.

Garnault-place, New River-head.

SEA-SICKNESS—A CURE FOR IT.

To the Editor of THE LANCET.

SIR,—I am much surprised at the opinion which is so prevalent of the utter incurability of sea-sickness. I believe this opinion to exist amongst the non-medical part of the community from sheer ignorance, and amongst sea-going surgeons from a supineness in applying remedies, a fault to which they are rather too subject. As surgeon to one of the first class American steamships, which each voyage carries over to Portland at least four hun-

dred emigrants, I think I may venture to state my experience. In the greater number of instances I allow the stomach to discharge its contents once or twice, and then if there is no organic disease, I give five drops of chloroform in a little water, and if necessary, repeat the dose in four or six hours. The almost constant effect of this treatment, if conjoined with a few simple precautions mentioned below is to cause an immediate sensation, as it were, of warmth in the stomach, accompanied by almost a total relief of the nausea and sickness, likewise curing the distressing headache, and usually causing a quiet sleep, from which the passenger awakes quite well.

As sea-sickness to a great extent depends upon a deficient supply of blood to the brain, the usual rules to be observed in the treatment are most useful—namely, keep the head lower than the rest of the body; apply sal volatile, or, still better, eau de Cologne, to the nostrils; give rather strong brandy-and-water; keep the passenger on deck if possible; give all food in very small quantities at a time, and only such as he or she feels inclined for; spiced beef-tea having been found the most beneficial by me.

Creosote I have seldom found beneficial, and therefore if the chloroform fails, I have recourse to diluted hydrocyanic acid in doses of about five minims.

I must apologize for intruding thus far upon the space of your valuable paper, and was only induced to do so from feeling the great want of reliable information upon all points connected with medical treatment at sea.—I am, Sir, yours, &c.,

W. P. HARRIS, M.D., &c.,

Surgeon to the *Kareoonoo* Steamship.

Clifton, July, 1857.

THE MARSHALL HALL METHOD OF TREATMENT OF ASPHYXIA.

To the Editor of THE LANCET.

SIR,—Permit me through the medium of your columns, to record another successful case of the employment of Dr. Marshall Hall's Method in the treatment of asphyxiated new-born infants. On the 22nd May last, I was called to attend a young married woman in her second confinement, during the absence of her usual medical attendant. On examination, I found the head with a loop of the funis presenting, and previous to the birth of the child all circulation in the chord had ceased from the pressure exerted on it between the parts of the mother and the head of the fœtus. Upon expulsion, the child was apparently lifeless; the face and lips were perfectly blue, and not the slightest pulsation could be detected in the heart. The usual remedies of dashing cold water, &c., on the face and chest failing in restoring animation, without waiting to tie the funis, I immediately adopted the puster method recommended by Dr. Marshall Hall for inducing artificial respiration, and caused that act to be performed about fifteen times in a minute. After a few minutes' trial the child gave a feeble gasp, and continued to do so every ten or twelve turns. The intervals between

the respiratory movements soon became shorter, and in half an hour it breathed. It appeared however, in a semi-comatose state and was some time before it became warm and could move its limbs. Even then the heart beat feebly, and at only half its normal frequency. The child from this time slowly improved, and is now a strong and healthy infant.

I am, Sir, your obedient servant,
HORATIO G. SKINNER.

Charing-Cross Hospital, July, 1857.

PHOSPHOROUS ACID IN ASTHMA.

To the Editor of THE LANCET.

SIR,—During several years past I have given great relief in many cases of asthma by the following preparation:—Glycerine (sp. gr. 1250), half an ounce; peppermint water, six ounces; spring-water, four ounces: one large spoonful to be taken three times a day. But I have recently been so very successful with phosphorous acid that I am anxious to make it known for the benefit of mankind. I will give you one case in illustration.

On the 29th of April last, Robert Kendrick, aged forty three, living at 60 Chambers-street, Goodman's-fields, Whitechapel, consulted me. The symptoms were—great difficulty in breathing, harassing cough, much yellow and greenish tenacious phlegm, costive habit, very cold extremities, greatly troubled with wind, early morning perspirations, bad appetite, mouth parched, offensive taste and odour, and very thirsty on awaking in the morning; urine scanty, and often much pain in the loins, headache, giddiness, &c. &c., with great emaciation and prostration of the physical and mental power. I at once prescribed phosphorous acid as follows:—Phosphorous acid, one ounce, to a pint of spring-water; two ounces to be taken three times a day. In the course of three days he found his breathing much better, and all the other morbid symptoms have gradually disappeared, until he is now able to return to his employment as a mechanic. I saw him a few days ago; he has become much more active and cheerful, holds himself more erect, and the countenance and complexion, which were anxious and cadaverous, have greatly improved.

There are several processes by which the phosphorous acid is formed, that of Sir Humphry Davy being perhaps the most precise, but requiring much care in its manipulation. The plan which I have adopted is a modification of that of Davy. If any of your readers would like to see the process, I shall feel great pleasure in showing and explaining it, if a note be sent to appoint a suitable time; or I will give any explanation by letter.

I am, Sir, your obedient servant,

Fountain-place, City-road, July, 1857. S. ROWBOTHAM, M.D.

CHOLERA AND DIARRHŒA.

To the Editor of THE LANCET.

SIR,—Although myself believing that true cholera is a disease *sui generis*, and distinct from diarrhœa, I would rather that others believed it from conviction than that they should take it for granted merely because asserted. I do not deny that cholera is often preceded by diarrhœa, but I would assert that diarrhœa does not run on into cholera.

There are apparently three divisions—viz., diarrhœa, choleraic diarrhœa, and cholera, or diarrhœa as generally understood, and arising from a variety of causes. Choleraic diarrhœa, including under this head English cholera, however severe, and diarrhœa attended with cramps, &c., and bilious stools, which will generally yield to one or two pills taken about the onset, each containing five grains of calomel and one grain of opium powder. Sometimes the eliminative treatment may be useful.

True cholera, I believe, begins in the following way:—A person feels ill, or as if he was going to have some serious illness; there is an anxious expression, more or less, about the countenance; skin dry and harsh, often has a dusky shade; and there is a sensation of chilliness throughout the whole frame; often a dark line around the eyes; lips more or less livid. This may or may not be attended with a slight diarrhœa. I believe the diarrhœa does not appear first, but follows very rapidly, at first very slight, and somewhat bilious; soon, however, the rice-watery evacuations appear, and then the usual concomitant symptoms; in fact, the symptoms of a sudden shock to the nervous system through some means or other (I do not purpose entering into the cause of the disease), with subsequent chilliness of the surface of the body, and followed, as might be expected, by diarrhœa or not, according to circumstances; for we have cases of "dry cholera," so-called; and we should recollect that, in a few cases, there is some warmth of the surface, even in advanced stages of the disease. I believe that a person suffering from diarrhœa is predisposed, and no more, to cholera.

Having thus stated my own conviction from what I have seen and observed, I am anxious that others should observe more accurately than is generally done, and not content themselves with merely observing whether or not diarrhœa was the premonitory symptom, but what were the sensations and symptoms each individual experienced at the very first onset, and up to the time when the rice-watery evacuations appeared. It is highly important to treat the disease in its first stage, as then it may be frequently arrested; therefore let practitioners watch well for themselves, and we shall soon know better how to treat cholera. My own plan would be, though I do not urge it as perfect, to give calomel *without* the opium (which I believe is injurious generally in true cholera), and also some wine or brandy, and some good beef-tea or chicken-broth.

* * Dr. Rowbotham should forward to us his mode of preparing the acid.

It may appear presumptuous in me to point out facts to others much superior to myself in general knowledge; but I feel so strongly on this point, and have noticed that so little attention is paid to the *careful* investigation of the first symptoms of cholera and their treatment, that I have ventured to mention facts observed by myself, and more or less corroborated by others; hoping that by this means, should another visitation of this fearful malady come upon us, we may be more prepared to meet it. I was induced to write, seeing the letter of Dr. Macloughlin in your last week's number.

I am, Sir, yours, &c.,

JOSEPH ALLEN.

July, 1857.

Junior House-Surgeon to the Royal Infirmary, Liverpool.

INAUGURATION OF THE STATUE OF BICHAT.

THIS ceremony took place on the 16th inst., in the court-yard of the Faculty building, the space, for the occasion, being overhung by an awning, and transformed into a magnificent hall. The Minister of Public Instruction, the representatives of the learned bodies and societies, and a numerous concourse of medical men and students were present. A military band played the "Imperial March," and the veil was removed from the statue. Choral voices then began to sing the cantata written for the occasion by Dr. A. L. Roux, the music by M. Elwart. Speeches were subsequently made by the Minister of Public Instruction; by M. A. Latour, as secretary to the permanent committee of the Congress of 1845 (by whom the statue has been presented to the Faculty); by M. Serres, in the name of the Congress; by Messrs. Paul Dubois and Bouilland, in the name of the Faculty of Medicine; and by M. Larrey, in the name of the Société Médicale d'Emulation, founded by Bichat.

The most remarkable discourse amongst those which were delivered, and one which expressed in eloquent terms the aspirations, sufferings, and ill-requited devotion of the medical profession of France was that of M. Amédée Latour, the editor of *L'Union Médicale*—a man, who for many years has used his facile and brilliant pen in defence of the great questions which bear on the welfare and dignity of our profession.

After this manner were the remains of Bichat, after forty-three years' inhumation, taken up with the honours due to his genius. The Medical Congress was closing its session, when it was rumoured that, owing to some territorial changes, the remains of Bichat, buried in an obscure corner of the St. Catherine Cemetery, would soon be lost to the profession. The meeting was at once unanimous, and it was resolved, after an eloquent address by Professor Malgaigne, that the body should be exhumed, and transferred, with the proper honours, to the Eastern Cemetery, where the Municipal Council had gratuitously granted a site. Much difficulty was experienced

in reaching the body, many others being superposed; at last it was recognised by an unmistakable sign, and carried with great solemnity to its final resting-place. It was at the same time resolved that a statue should be erected to the great physiologist in Paris, his adopted city, a similar memorial having already been placed in the principal square of Bourg, a town situated near Bichat's birthplace. A subscription was opened, which was filling rapidly, when the revolution of 1848 paralyzed efforts of this kind. With true artistic liberality, David (d'Angers) agreed to lend his chisel without remuneration; and now, twelve years after the meeting of the Congress, the committee were enabled to offer the statue (the late David's last work) to the faculty.

M. Latour, after completing this historical account, of which the preceding lines are a faint epitome, dilated, in an impressive and eloquent manner, upon the wrongs of the profession, who have not yet obtained the reforms promised during the sitting of the Congress, and which were embodied in a Bill swept away by the events of 1848.

"Since that period," said the orator, "the medical family of France have stood by their imperilled country. They suffered bitterly from civil discord, but concealed their misfortunes, and would not divert the attention of the ruling powers from the work of reconstruction required after political commotions. The medical men of France sacrificed all to their country, even the right of making known their grievances. They remained silent as if their most ardent wishes were satisfied by scientific researches, by the fatigue of practice, by contending against epidemics (those battle-fields of the medical man in civil life), by the perils of the Crimean campaign, by the dangers on the Black Sea and the Baltic; doing everywhere courageously and firmly their duty, and showing themselves worthy heirs of the great medical generation to which Bichat belonged, worthy descendants of such benefactors of humanity as Depuytren, Boyer, Desgenettes, Larrey, Corvisart, Broussais, Laënnec, and so many others who have raised medical science so high in the estimation of men! (Vehement applause.) Therefore is it, because medical men have shown themselves patient, high-minded and noble-hearted, surrounded by suffering and disappointment, because they did not once swerve from the path of duty, that they deserve the sympathy of the ruling power. Let this government, which has given France tranquillity, the glory of the battle-field, and a no less glorious peace, take up the wishes of the great congress of 1845, more for the benefit of society than the profession. Medical men do not ask for corporate restrictions and privileges. No, they ask (and this is certainly not common in the history of professions) that society should exact greater guarantees from them, in placing medical studies on a higher footing; they ask for proper classical preliminary education (which has lately been

done away with), and that the public should take in hand, in self-defence, measures of repression against impostors who trade on public credulity; they ask for the abolition of the inferior medical degree (*officiers de santé*), because the tiller of the land has as much right as the rest of the community to have his ailments relieved by thoroughly competent men." (Much applause.)

The orator next dilated on the great advantages of the spirit of association amongst medical men; and concluded by ingeniously applying to the professional body one of the finest conceptions of the physiologist they were honouring on the present occasion, showing that the medical profession presents, like the human frame, an internal or organic life, which must be regulated by laws, decrees, &c., emanating from the ruling power; and the life of relation with the external world, which must be left to the unshackled direction of medical men themselves.

M. Latour's discourse was concluded amidst the most enthusiastic applause, in which the Minister of Public Instruction took a very warm part. We hope our French brethren may soon see the accomplishment of their wishes, and that the voice of their eloquent advocate may strike deep into the minds of those who can contribute to the reorganization of the medical body in France.

The proceedings terminated by a repetition of the final verse of the cantata.

EXPOSURE OF THE QUACK SYSTEM.

BLOOMSBURY COUNTY COURT.

July 30th, 1857.

(BEFORE MR. LEFROY, DEPUTY JUDGE.)

— V. KAHN.

THIS was an action brought by the plaintiff, a clerk in a mercantile house, against the defendant, Joseph Kahn, proprietor of the anatomical museum in Coventry-street, to recover the sum of £20, alleged to have been fraudulently obtained under the following singular and extraordinary circumstances.

The case has excited a great degree of interest in the medical world, and the court was crowded with spectators, anxious to hear the result of the trial. Amongst the company were several eminent medical practitioners.

Mr. Bowen May, solicitor, of Russell-square, appeared for the plaintiff; and Mr. Barnard, counsel, conducted the defence.

In opening the case, Mr. MAY said: This action is brought to recover the trifling sum of £20. The particulars of the plaintiff's demand set out that it is for damages occasioned by the defendants' improper treatment during the months of August and September, 1856, whilst employed by the plaintiff to cure him of a complaint under which he was then labouring, whereby the plaintiff was

put to useless expense and pain, and the plaintiff claims the said sum of £20 for money had and received, and fraudulently obtained of the plaintiff by the defendant.

The learned counsel for the defence here suggested the propriety of all females leaving the court, which having been complied with,

Mr. MAY proceeded: The action is to recover the sum of £20, fraudulently obtained from the plaintiff, but in spirit it is brought for the good of the public and society at large. The plaintiff is clerk to an eminent firm in the city, and is a very respectable man. The defendant is one of those gentlemen who live upon human nature by frightening weak-minded people, and reducing them to such a state of alarm as to be enabled to act upon their credulity. He is not a qualified practitioner, but avows to the world that he is a physician, and it is under that representation, I shall show, that the public are induced to go to him. Directly he obtains his fee, he does not care one farthing for the cure of the patient, and he also presupposes that persons are labouring under "spermatorrhœa." Now, your Honour, this young man in a weak moment went to Dr. Kahn, and the first thing Dr. Kahn said to him was, "You have spermatorrhœa; what money have you? You see this is a very dangerous disease, and I am the only one who can cure it; but if I cure you, it must be for a good amount. However, as you are a poor man, I'll do it for £20." And nothing more was said then, but a panacea was given—supposed to contain antimony, the effect of which is to depress the patient to such an extent, that a person labouring under its influence for any period would believe anything. Then by a microscope the doctor discovered some animalculæ. This is one of the microscopic dodges, which frighten nervous people. He produces this before the man, who said, "What am I to do?" He answered, "I shall want £50." Then when he finds this poor young man is acted on in this way, who could not give £50, as he said, the doctor exclaimed, "Your brains are passing out into your water, and you will die." (Laughter.) And thus the young man was reduced to that state of melancholy that he would believe anything that was told him, and when he came again, he found that he was worse instead of better. No man goes to these quacks unless his mind has been acted upon previously, and then nothing is too gross for him to be made to believe. Now, it is a singular fact, that directly the plaintiff left off the medicine, he got better. He went to a regular practitioner, and in about three weeks he was well. Sir, I will show you that this is a common occurrence with Dr. Kahn. I shall you a case where he got a heavy sum of money from a person under precisely similar circumstances.

The DEPUTY JUDGE.—No, no; that will be quite unnecessary, because we are trying this case upon its merits.

Mr. MAY.—But, your honour, I shall show complicity, and not only that this case is a fraud, but that it comes forth with a fraudulent intent. I

shall satisfy you that this defendant lives upon young men by the money that he obtains in this identical way. I shall examine Mr. Hancock, a gentleman of great repute as surgeon to the Charing-cross Hospital.

The DEPUTY JUDGE.—Your case is, that he really obtained money by fraudulent pretences.

Mr. MAY.—If I bring an action against an unqualified man, I must show that he professes that for which he is not legally qualified.

The DEPUTY JUDGE.—But you have no right to go into other cases where he obtained money; that has nothing to do with the present case, and if you prove what you have opened, I do not see that it is necessary to prove anything more. You surely have opened quite enough.

Mr. MAY.—This is a matter of public importance. It is not merely a question of £20, which only forms a little ingredient. The sum obtained was £51; the first sum was £1, and he gradually gets money until he obtains that amount in the aggregate, as is the customary practice of these charlatans. If he were a qualified man, then he would not be entitled to what he has charged. I shall show that the most he can charge is a guinea; whereas we pay £50 for not being cured, but, on the contrary, actually made infinitely worse. The fact is, he is one of the advertising quacks, and it is not for the trifling sum that we come here to-day. We wish, by the judgment of your honour, which I have no doubt will be in favour of the plaintiff, to suppress this monstrous system of traffic and trading upon young men. I shall prove to the court that he is in the habit of getting thousands of pounds from clergymen and other young men who are ashamed to state what their cases of disease are. I shall also prove that the plaintiff had scarcely any malady upon him at all; but that he was reduced to this state merely for Dr. Kahn's purpose, that of putting money into his pocket. First, I shall call the plaintiff to show your honour that he was to be cured for £20, that there was a compact, and medical evidence to prove that the patient's symptoms could only be produced by the medicines administered to him by the defendant, and I shall satisfy you that when persons labour under disease produced by such treatment, they fall into a state which occasionally leads to insanity. Perhaps the most atrocious part of this case is, when the young man said, "You've not cured me; give me back my money!" and the doctor replied, "If you dare ask for that, I shall accuse you of masturbation" (sensation); which was utterly false, and a piece of rascally conduct on the part of the defendant.

The DEPUTY JUDGE.—Oh! even if it were true, it would be a monstrous thing for a medical man to assert. (A burst of applause for a moment followed this remark from the Bench, but which was immediately repressed.) I say, whether it be true or not, it is a breach of confidence, and a monstrous assertion to make.

The plaintiff was then sworn and examined by Mr. May.

I believe you went to consult Mr. Kahn!—I went in the month of August, 1856.

Did you believe he was a regular practitioner?

Mr. BARNARD.—I object to that question.

Mr. MAY.—In what capacity did you go to him?—I went to consult him about my health.

But for that you would not have gone to him!—No; and I waited an hour before I could see him. He asked me what was the matter; and I told him that I had had the "clap," and that I did not think that I was cured of it.

Was there anything important the matter with you at that time?—Nothing at all, except when I went to the water-closet there was a little secretion came from me, and I told him that, and he said, let me look at it—"Let me look at you." So I let my trowsers down, and he put his hand there, and said, "You have been committing self-abuse; you have got spermatorrhœa." And I said, I have not.

Now, I ask you if you ever did so?—I never did it in my life; and the doctor then said, "My fee is a guinea," and he said, "My charge to cure you of spermatorrhœa is £20," after having received the guinea. I called again, and he gave me a little case with six small bottles in it. I had not spermatorrhœa at that time. I took him £10; and afterwards £9. Altogether, I gave him £21 1s.; and he said, "I have got your medicine prepared for you. You go home now, get into a room, and never stir out for eight-and-twenty weeks; and take three times a day a tea-spoonful of the medicine that is in the box." I said, I cannot do that because I have to work for my living—I have to work for my livelihood. He then said, "You will lose your life if you do not do it; therefore you had better give up your situation than lose your life." He entered in a book that if I paid £15, and different sums until I had given him £50, he would cure me. I told him that I could not stop in the house eight-and-twenty weeks.

The DEPUTY-JUDGE: In whose employment are you?—The Witness: I will write it down, but I object to say.

Well, what salary do you get?—A hundred a year.

Mr. BARNARD: Where is your employment; I shall want it?

Mr. MAY (interposing): Was anything said about a microscope?—Yes; he gave me a glass, and said, "Just step inside and make water." I brought it out and gave it to him. He then took the glasses. There were several of the same glasses in the windows and he took up a glass similar, with a camel-hair brush, and with it put a drop on a glass; and then he said, "Oh! my God! you are in an awful state! you are wasting away; and it is a lucky job that you have come to me, for if you had gone to some ignorant man you would be dead!" He then rang the bell, and ordered "No. 9," which was a case that contained twelve small bottles. I had to take a table-spoonful three times a day, and to come to him when it was finished.

Did you get any better?—No; my eyesight

got quite dim. He said, "The medicine has been acting upon you, but you will be soon better." I had not had a day's illness for fourteen years of my life. My spirits were very much depressed, and in October I went. I had a little sore come underneath the skin of my penis, but he said, "That is nothing; you had better go home and get some yellow soap, and keep washing it." He then ordered me to put some powdered alum on it, and that made me ten times worse. He told me I had a constitution like a horse, and added that I had the pox; but I had not, because I had not touched a woman. At Christmas he said, "Your case has been very expensive to me, and I shall want some more money." He then had the sum of £51 1s. He went on to say that my case was a very difficult one, and he should want some more money. I gave him a £10 note and a £5 note on Christmas-eve, the 24th of December, and that made up the £51 1s. He gave me some more medicine of a different sort, and said, "When it was done come to me in three or four months' time." About the middle of March I found myself very ill indeed, and I went to Mr. Acton, who said, "What is the matter?" I said, "I had come in consequence of this gross charge against me."

Cross-examined by Mr. BARNARD: How often did you go to Dr. Kahn's establishment?—I did not go more than seventeen or eighteen times. On the 24th of August I gave one guinea and £10, and in about twelve days after that I paid him £9, making up £21; I also paid £15, for which Mr. May holds the receipt, and I paid him the rest at another time.

Will you swear that you ever saw Dr. Kahn?—I went to inquire for Dr. Kahn, and I was shown somebody that represented himself as Dr. Kahn; but I heard two months afterwards that it was not Dr. Kahn, but his brother. Kahn did also attend me, though.

Were you a married man at that time?—No, a widower, and had a child.

What have you been doing since?—Well, I do as a good many men do, I run astray sometimes. It was the first time. All I told Dr. Kahn was that when I went to the water-closet there was some secretion came from me, and that I had the clap. I felt it in June, and I should think it was on for more than six weeks.

How came you to go to Dr. Kahn?—A friend of mine had gone to one of his lectures, and he brought one of his books with him.

Now, what are you?—I am a clerk.

In whose employ?

Mr. MAY.—Don't tell him.

The JUDGES.—Surely that is unnecessary. It is a needless exposure.

I object to say; but I will write it down. However, if I must say, I will do so openly in court. I am employed by the —, the railway contractors, in the —, and I have been there eleven years.

You married again?—Yes.

When did you marry?—Last week.

Had you consulted any other man at all before you went to Dr. Kahn?—No, I had not.

By the COURT.—Altogether I saw him about eighteen times, and I paid three times the amount.

Re-examined by Mr. MAY.—Where did you see this second man who called himself Dr. Kahn. Was it at defendant's house at 17 Hartley-street?—Yes.

And when you saw the real "Simon Pure," had you any conversation with him?—No.

The DEPUTY-JUDGE.—When you saw the real Dr. Kahn, was anything said about his brother's treatment?—He said his brother was ill and he would prescribe for me.

Did you know Dr. Kahn was a lecturer?—No.

Dr. M'Cann sworn and examined by Mr. MAY.—I have heard the history of this plaintiff, and in my opinion the depression, lassitude, and state of the patient would be produced by—

Mr. BARNARD (counsel).—I object to the question and answer being given in this way.

Mr. MAY.—What effect has antimony, Dr. M'Cann, upon a patient under such circumstances? Question objected to.

Would the proper medicine for spermatorrhœa produce the effect that was produced upon the plaintiff?

The DEPUTY-JUDGE.—What is the proper medicine?—That would depend upon the causes from which it arose, but tonics and chalybeates generally ought to be given.

Would it be proper to confine the patient for twenty-eight weeks to one room?—I should say highly improper.

From what you have heard of the description of the plaintiff's complaint, would that be spermatorrhœa?—I can't answer that question. I had a precisely similar case put before me a very short time ago, in which the same defendant obtained a very large sum of money, but which we compelled him to return.

The DEPUTY-JUDGE.—You must not tell us about that, as it is not evidence.

Mr. WM. ACTON, surgeon, sworn, and examined by Mr. MAY.—You have seen the plaintiff, have you not?—Yes, I attended the plaintiff on the 21st April, and I put questions to him in my medical capacity as to his general health, and from the conclusions I came to I imagined him to be suffering under some of the assumed forms of spermatorrhœa. He was labouring under great debility, and the result of my examination was the opinion that he was not suffering under spermatorrhœa. He was in an excessively languid state, and there were no signs of his ever having had the pox, nor any symptoms of his having recently had it.

Is it possible that the infinitesimal portion of urine that would remain on a camel-hairbrush, just touched on a glass, even in spermatorrhœa, could deposit a sufficient amount of animal life to be disclosed to frighten any man?—No; I should say not.

If a man were suffering under spermatorrhœa, and a paint-brush were dipped in a glass, would

living animalculæ be visible?—No; it is not possible. When a person presents himself to me, I make him pass urine, and it gradually settles down in the vessel or glass. It is just at the very bottom that when there is semen you can discover it. That takes about twelve hours; and if there be any animalculæ, you can detect them in the deposit.

The DEPUTY-JUDGE.—But has your practice been confined to that part of the profession?—I was many years in Paris as surgeon, and have written books upon the subject, and am now publishing a third edition of one.

Mr. MAY.—Then it is perfectly impossible that the camel-hair brush dipped into it could show animalculæ to frighten the plaintiff? Could a man have spermatorrhœa without being aware of it?—A large number of persons suffer in such a way that on going frequently to the stool they find a certain quantity of the matter is pressed out. This arises from the mechanical action, not from disease.

Do you think the treatment that was adopted was prudent?—No; I should not think so decidedly, and especially keeping him eight-and-twenty weeks in a room. It would have the opposite effect. He would require tonics, and things to amuse rather than depress him—fresh air, plenty of food, and tonic medicine.

The PLAINTIFF re-called.—What did Dr. Kahn say with reference to your food?—He said do not eat anything like pork, but otherwise you can live as usual. (Laughter.)

Mr. MAY to Dr. M'Cann.—Now, doctor, would pork have any peculiar effect upon a man suffering from spermatorrhœa. (Renewed laughter.)—No; not that I am aware of.

Was the patient from what you could judge—

The DEPUTY-JUDGE.—The important part of this case is the threat to disclose it. It does not signify whether the man had it or not. The defendant would have no right to extort money under the threat to him. (A letter was here read attempting to prove that the plaintiff had admitted having practised masturbation from the time he was eighteen up to the present period of his life. The document was from the defendant's solicitor; and the plaintiff being again called, declared that he never said he attributed the symptoms of his case to self-abuse.)

Examination of Mr. ACTON resumed.—Can you tell from the examination of a patient whether he is guilty of that practice?—It is impossible.

The DEPUTY-JUDGE.—Would the practice produce spermatorrhœa?—It is one of many causes.

What is the effect of giving small doses of antimony to the patient?—It has a very depressing effect, such as described by the plaintiff.

Was there any semen passing from the patient while he was under your treatment?—None, Sir.

Are yellow soap and alum the proper treatment?—It is a very homely remedy, but it is not a medical one. I should think it would be highly irritating.

From the known properties of those two

articles would they be likely to irritate?—Yellow soap is an irritant, and alum is the same.

The DEPUTY-JUDGE.—That is important.

Cross-examined by Counsel.—Had the pimples disappeared?—Yes, because twelve months had elapsed, I should be very sorry to put either alum or yellow soap to any irritating sore.

What should you say if the pimple disappeared under such treatment?—I cannot say.

Are you a surgeon?—Yes; a member of the Royal College of Surgeons. My practice has been pretty general.

You introduced the plaintiff to Mr. May?—Yes, I did.

And you consulted with Mr. May as to writing a letter to THE LANCET?

Mr. MAY.—Don't answer the question.

Mr. BERNARD.—Has not Mr. May talked to you about sending a letter to THE LANCET?

Mr. MAY (to the Court).—I object, Sir, to this question on this principle, that what occurs in THE LANCET is not evidence in this case. I see there is a letter in THE LANCET upon the subject of quack doctors.

The DEPUTY-JUDGE.—I don't see how you can get out of it. I think you had better answer the question.

Mr. BARNARD.—You and Mr. May consulted about exposing the quacks in THE LANCET?

Mr. ACTON.—I had a conversation when I introduced this client to Mr. May.

Did you not say, "If I were you I should expose these quacks in THE LANCET?"—No, I don't know that I did.

Did Mr. Bowen May write the letter, or did Mr. May tell you that he had sent a letter to THE LANCET?—I believe he did.

Did he not tell you that he had written a letter to expose the quacks, and that in THE LANCET?—He said he had written a letter upon the subject, and I saw the letter.

Re-examined by Mr. MAY.—You told me that you had seen a letter, and was that the first time that anything was said about the letter?—Yes.

Mr. MAY proposed to show that the name of Dr. Kahn was not in the "London Medical Directory" of licensed practitioners, when an objection was taken by counsel, in which the court concurred.

Dr. SEMPLE was sworn and examined by Mr. MAY.—I am a physician and also a surgeon, and until lately was one of the examiners at the Apothecaries' Hall. All licensed medical men have their names recorded in the "London and Provincial Medical Directory."

Mr. BARNARD.—I object to the statement.

The DEPUTY-JUDGE.—It would be hard to say that a man was not a barrister because his name was not in the "Law List." I don't see that the matter is worth much.

The Witness.—I entirely agree with the two preceding witnesses as to alum and soap being irritants. The soap contains a strong alkali.

The DEPUTY-JUDGE.—Supposing a man were suffering from spermatorrhœa, what do you say to

ordering him to remain in a room for twenty-eight weeks!—A. Most decidedly improper, in my opinion.

Mr. MAY.—It would tend to promote the very disease under which he was said to be labouring?—A. Quite so.

Q. Would pork be objectionable?—A. Not at all.

Q. You have heard the description from the patient. How long, with the constitution of a horse, ought the complaint to have been before it was cured? We hear that Mr. Acton took three weeks.—A. I may state my very distinct opinion that from the first I considered he has not had spermatorrhœa at all. I have had great microscopic experience.

Q. What is the proper fee for a man coming to you at your own house eighteen times?—A. Supposing the party to be in a good position of life, we expect a guinea a day—that is, as one may say, we charge a guinea, but of course a smaller sum would be taken; and there is no doubt but that £50 is an atrocious charge. Any medical man would say that the medicine which caused these symptoms mentioned was most improper to be administered.

Cross-examined by Counsel.—A person suffering from spermatorrhœa might still have great depression of spirits, although he was taking tonics!—A. Oh, decidedly; but there are a great number of persons who have not spermatorrhœa at all, who nevertheless are persuaded that they have it, and these are cases that lead to insanity. A little mucus coming from the end of the penis most likely arises, not from spermatorrhœa, but from other causes.

Q. Does spermatorrhœa prevail to a very great extent?—A. No, I don't believe it does.

The COURT.—But you believe in spermatorrhœa?—A. Oh, yes, in the limited extent; but I believe that in nine cases out of ten they are not spermatorrhœa.

Q. What is the difference between a bad case and a mild case of spermatorrhœa?—A. In a bad case it is almost hopeless. The symptoms are excessively depressing; the semen passing away constantly and involuntarily, and the man being impotent. It comes in the night-time chiefly, and sometimes in the daytime. It is not continuous, but is so frequent as to debilitate the patient, and especially without assistance.

Mr. MAY.—Is not this work of Mr. Acton orthodox, and admitted by the profession to be a great authority, which I am going to quote from?—(The Court objected.)

Dr. WHIDBORNE examined.—I agree with the evidence of the previous medical witnesses.

Mr. MAY.—I shall put in this letter, and also the letter acknowledging an instalment, in which Dr. Kahn, as he calls himself, admitted the receipt and a portion of the demand.

Mr. Hancock and Mr. Thorne were here called to give further evidence, but those gentlemen had left the court.

Mr. MAY (in continuation),—I now say I am

entitled to call the patients that consulted the defendant without any disease whatever, who have had these identical remarks made to them, and the same charges of masturbation made against them, to show the systematic practice of fraud which I allege against the defendant. It is just this: if you are supposed to be married, you are charged with venereal disease; and if not, you are charged with masturbation; and I wish to call that class of evidence to confirm the plaintiff, and to show what I opened.

The DEPUTY JUDGE.—But as the case stands, the evidence of fraud is not very strong against the defendant, because a fraud committed by his assistant would not bind him.

Mr. MAY.—This man adopts his partner for the purpose.

The DEPUTY JUDGE.—Is he a partner?

Mr. MAY.—It is his brother. Then we show the complicity, and more, that he and his *confrère* have had the money.

The defendant, by way of making out a justification of his attorney's letter, hinting at masturbation, produced the leaf of a book wherein, under the printed heading, "Nature of Disease," was a statement bearing out the attorney's letter.

The plaintiff was retalled and examined as to this entry, and he swore most positively that not a single word was there entered in his presence, or when the other headings were filled up.

The DEPUTY JUDGE.—Well, I don't think you are entitled to call the evidence as you say.

Mr. MAY.—Very well, Sir; I shall bow to your decision.

The DEPUTY JUDGE.—I think you are not entitled to call the evidence that you speak of, because the defendant could not come here prepared to meet all those cases.

Mr. BARNARD.—Sir, I don't know whether you consider there is any case made out at all?

The DEPUTY JUDGE.—Oh, yes, decidedly. You may, if you like, apply yourself to the improper treatment.

Mr. BARNARD.—It is quite clear that the defendant cannot be answerable for the false representations of his assistant.

The DEPUTY JUDGE.—Upon the latter part of the declaration I think the evidence breaks down.

Mr. BARNARD.—The only evidence is that, first, with respect to this principle, the assistant recommended that alum and yellow soap should be used; but that fact was entirely got rid of, because you will find that the plaintiff says he used the yellow soap about a fortnight, and the irritation was greater. And what ground could there possibly be with regard to the yellow soap and the alum? It is not as though Dr. Kahn was charging as an apothecary for a dose and a pill to-day, and the next day, and so on, making a mistake as to the treatment; but it is an action brought against the doctor for improper treatment. Surely there was never such a case. The only particle of evidence is the recommendation that the doctor is supposed to have given the plaintiff to shut himself up in a room for so many

weeks. Now, do you believe, sir, that the agent—the assistant as the agent—is entitled to give any such evidence at all? If given—and I must assume it to be—is it not part of the fraudulent statement made by the assistant to procure money, and not part of the treatment? If Dr. Kahn's assistant made a representation, it was a fraud practised with a view to obtain money. There is no other evidence in the case which bears upon it. I must say that I think Mr. Bowen May, in this case—and I give him credit for it—has acted very consistently altogether. I give him credit for believing that Dr. Kahn has extorted in this case, but at the same time I think he has himself slightly imitated Dr. Kahn without meaning it. The matter was fairly met, and an offer was made to leave it to any barrister to determine what should be done; but Mr. May thinks that because Dr. Kahn is not a member and fellow of the colleges in England—although he is a duly qualified man in one of the continental schools—that he is unfit to practice; and Mr. May may think that by threatening an exposure Dr. Kahn will repay him over the money. Now, Dr. Kahn is not disposed to be intimidated in such a way. And I must say I think the two gentlemen have gone a little too far in sending a letter to THE LANCET: here is a correspondence between the 11th and 17th of June (letter read). On the 17th of June Mr. May writes again, presenting his compliments, and promising to call upon Dr. Kahn on the following day, on his way to the Botanical Gardens, at half-past three p.m. Then there is another interview between Dr. Kahn and Mr. May, and Mr. May threatens some sort of criminal proceedings. Then comes the letter from Mr. Phillips; and Mr. Phillips writes the letter that you have already had. In answer to that, Mr. May writes a letter of the 22d of June. (This and the other letters were put in and read, after which the learned Counsel proceeded)—And I submit that there is no evidence at all to affect Dr. Kahn, except the two small points that I have urged; at all events the treatment was never followed, and therefore no injury could arise from it. I shall therefore leave the case in your hands, sir, with great confidence, as I really do not see that a case is made out against my client. He might observe that the person who had obtained the money from the plaintiff would have been called, but he had long since left the defendant's service, and could not be found.

M. MAR said the judge could form his opinion of the value of the last remark, from the fact that the person alluded to had been in the court during the trial.

THE DEPUTY JUDGE then delivered judgment as follows:—I have not the slightest doubt upon this case; that it is a case for damages, and that the plaintiff is entitled to recover the whole of the sum claimed. I think it is highly creditable to the plaintiff that he had the moral courage to come into court and expose this transaction; and as to the agency, the assistant, whoever he may be, has certainly committed a gross fraud, and

one cannot help feeling warmly that this fraud was practised. At the same time one cannot help seeing that as to Dr. Kahn not having been present at the interviews, that this is a mere stratagem to secure himself against the consequences of being brought into a court of justice. The whole of the case, I think, is very discreditable to the defendant, and the plaintiff is entitled to the judgment of the court for the whole of the amount sued for. One cannot help saying that the whole case is most discreditable and disgusting, and I shall allow the highest expenses to the witnesses.

Verdict for the plaintiff for the full amount claimed, with all costs.

THE FRENCH PRESS ON SECRET REMEDIES.

WE translate from the *Gazette Hebdomadaire de Médecine et de Chirurgie*, of the 17th July, the following paragraph, relating to our disapproval of the course pursued by the surgical staff of the Middlesex Hospital, respecting the nosocomical use of secret remedies:—

“Dr. Fell has discovered a certain remedy (for cancer, if we recollect rightly), and has asked permission to try experiments in hospitals. The surgeons of the Middlesex Hospital, Messrs. Shaw, de Morgan, and More, thought they could grant this permission without requesting the supposed discoverer to make known beforehand the composition and the exact formula of the remedy. Here we have then, strictly speaking, a ‘secret remedy,’ employed in a public institution, and which three eminent men of London protect by their known respectability. This compact, which in this country is unheard of, and could not possibly exist, has much significance as regards the medical tone which reigns in England, even in the highest ranks of the profession. Should this example be followed? By no means. On the contrary—and although we think, and are not afraid to say, that we in France are too much disposed to seek the protection of the laws, and to ask the government to watch over our welfare—we do think that liberty, when it goes so far as to administer to patients who apply to you, trusting in your skill and morality, drugs, the composition of which you are not acquainted with, oversteps the rights of the medical man; and that such a proceeding is especially dangerous in a hospital, where it assumes the appearance of an experiment ‘in anima vili.’ A secret remedy is, besides, in itself, an immoral article; for, if it possess the virtues claimed for it, public health is frustrated; and, if it possess them not, public health is compromised. The only proper way of doing justice to the rights of the discoverer and of humanity is to attach his name in an honourable manner to the remedy, when the latter is found worthy of being inserted in the minutes of the Academy of Medicine, or the purchase of the remedy by the State. We therefore heartily join with the English medical press in blaming the governors of the Middlesex Hospital; and gladly congratulate, on

the other hand, the governors of the Brompton Hospital for Consumption, for having declined the offer of Dr. Churchill, who proposed to make experiments with some secret remedies upon the patients of the hospital.

COLOURATION OF POISONS.

The following results, arrived at by Dr. Moffat, of Hawarden, in relation to carbo-azotic acid, are particularly interesting at the present juncture. Some such agent as that which our correspondent has experimented upon would appear to us to be indispensable to the machinery of any Act of Parliament bearing upon the sale of poisons.

"Carbo-azotic acid is recommended for the colouring of poisons, because—

"1stly.—Its colouring power is so great, that one grain is sufficient to impart a distinct yellow colour to 70,000 grains, or one gallon of water.

"2ndly.—The taste is so intensely bitter, that in the above proportions it imparts a very decided bitterness.

"3dly.—Carbo-azotic acid also possesses the valuable property, *which is peculiar to itself*, of giving a yellow colour to the skin, as if the person were suffering from jaundice, when taken for three or four days in doses of one grain per diem. This coloration would be easily distinguished from jaundice by any medical man.

"4thly.—The strong colour which carbo-azotic acid imparts to food, urine, and fæces, would serve as a proof that poison had been administered, especially when detection of the particular poison employed might be doubtful, as in the case of strychnine and other organic poisons. [Carbo-azotic acid can also be detected in *minute quantities* by the appropriate tests.]

"5thly.—A saturated solution of carbo-azotic acid in prussic acid does not appear to modify the therapeutic action of that potent remedy; and twenty drops of such solution impart a deep-yellow colour to one gallon of water. [Ten drops *tinge* one gallon.]

"6thly.—The colour imparted to water is permanent. A bottle of water taken from *sixteen gallons of water*, to which *one grain* of carbo-azotic acid was added on the 21st of March, 1856, *upwards of fifteen months since*, still retains its yellow colour.

"7thly.—Carbo-azotic acid does not produce any deleterious effects upon the system. I have administered it until the skin, conjunctiva, urine, and saliva were quite yellow, and a bitter taste felt in the mouth, without perceiving an unfavourable symptom."

News Items, Medical Facts, &c.

MEDICAL PRACTITIONERS AT DELHI.—We are happy to contradict the report of the deaths of the following gentlemen:—Drs. Hockin, Clark, Cotes, Batson, Waghorn, and Scott.

DOUGLAS JERROLD has passed away into the silent land of Death. His illness was only of a few days' duration. Long-existing disease of the aortic valves had rendered him peculiarly susceptible to unhealthy influences; and pulmonary and renal congestion, terminating in ischuria renalis, ended his earthly career. He died at his residence as Kilburn, in his fifty-fifth year, leaving vacant a place in literature that no one living is competent to fill, and which he had attained by his unaided exertions and the greatness of his own genius.

For he was

"of an excellent
And unmatched wit and judgment,"

using the words in their fullest meaning, as they are contrastedly defined by Locke. His was none of what Ben Jonson (whose writings he dearly loved) styles "the frippery of wit." How the sparkling repartee—*terre et rotundum*—was wont to flash from his lip with the rapidity of thought will long be remembered by that circle of friends to whom his loss is irreparable. He had a strong bias, it is true; but it was a noble one. He loved to defend the cause of the poor and oppressed, and, if need were, to attack with the whole force of his crushing satire the aggressor. In the newspaper edited by him, and wherein his writings were weekly read by hundreds of thousands of readers, he always steadily advocated sanitary improvements as a right due to the poor. By those most intimate with him, even his abounding genius—all that is known of him to the world—is half forgotten, in grief at the loss of that noble kindly heart and gentle sympathizing spirit which endeared him to all who knew him, or who had ever sought his counsel and aid in the hour of tribulation.

AN EGG WITHIN AN EGG.—The Cleveland (Ohio) *Herald* says:—Wheels within wheels are plenty as blackberries, but an egg within an egg is a barn-yard freak we had not dreamed of until shown a Shanghai egg, regularly laid at Canton, Stark co., which is double throughout, shell and all. The outside egg was a large one, even for a Shanghai, but inside it was another egg about the size of a common hen's egg. Around the inner egg, and between its shell and the shell of the larger egg, was the yolk and the white of the larger one. Both eggs had regular "hard shells."

OPIMUM IN THE EAST INDIES.—It appears from a return to the House of Commons, printed on Saturday last, that the amount of all expenses incurred in the growth and manufacture of opium at the Benares opium agency in the year 1854–55 was 3,23,27,490 rupees; the amount realized by the sale was 10,52,74,279 rupees; and the amount of profit, exclusive of presidency charges, was 7,29,46,790 rupees. In the Behar agency, the total amount of expenses appears to have been 90,24,183 rupees.

THE HUNTERIAN MUSEUM.—From a document recently published, it appears that this unrivalled anatomical collection has had nearly £200,000 expended on it by the Council of the College of Surgeons, exclusive of £42,500 granted by Government at different periods. The total expenditure for the last ten years, according to a Parliamentary return, appears to have amounted to £66,557 11s. 3d. As illustrating the large sum required for additions, it may be mentioned that the institution gave as much as £300 for the single specimen of a Glyptodon, and for the bones of a *Proteosaurus* £100. The library, which the museum may be said to illustrate, now contains 50,000 volumes, restricted to medicine and its collateral sciences, constituting the most complete body of reference on these subjects in the kingdom, if not in the world.

HUMAN LONGEVITY IN AMERICA.—From Professor Tucker's analysis of the American Census, from 1790 to 1840, published a year ago, we derive the strange result, if true, that the chances of living to above one hundred years are thirteen times as great amongst the slaves, and forty times as great in the free negroes, as in the white population of the country.—*Edinburgh Review*.

THE "ECRASEUR" IN CANADA.—Chassaignac's écraseur was used for the first time in the Canadas during the past winter, in the General Hospital at Montreal, by Dr. McCallum, for the purpose of removing some internal piles, which was satisfactorily accomplished before a large number of anxious spectators. Resection of the knee-joint has not as yet been tried there. A case presented itself in the early part of the last winter, which seemed in every way suitable for this proceeding, Dr. McCallum having made up his mind to perform excision, but the surgical staff in consultation thought the patient should have a chance of obtaining an ankylosed limb. The patient was a girl, with strumous disease of the joint.

DISCOVERY OF NATURAL GAS AT HULL.—On the 28th ult. an extraordinary phenomenon was witnessed in Crystal-street, Hull, at the private residence and private waterworks of Mr. Thomas Stather, civil engineer. It was that of fire and water issuing at the same moment from the same fountain. Mr. Stather wished to sink a well, and for that purpose had engaged a large body of experienced men. Up to five o'clock on Monday afternoon, the well-sinker had bored to the depth of forty-eight feet below the surface, and at forty-five to forty-eight feet had found a bed of peat, three feet thick, beneath which he came to a bed of gravel, containing broken flint and the remains of marine shell-fish. As the water now issued

from the surface of the boring in a bubbling fountain, varying in height from one to six or seven feet, and from that to ten feet, spurting out volumes of gravel and fine sand, the sinker, who had in sinking other wells, previously seen something of the kind, though on a smaller scale, being certain that this was occasioned, not by the force of water, but of gas of some kind, determined to try whether it was inflammable, a thing which he had never in his life attempted before, and to his surprise there rose a lurid flame, two yards in height, issuing from a tube three inches in diameter, and through which tube the water continued to flow and boil over without at all diminishing the volume of flame, which ascended considerably higher than the garden wall, which is seven feet high. The flame was extinguished for the night for fear of alarming the neighbourhood. On Tuesday morning Mr. J. D. Sollitt, the chemist and lecturer, and head master of the Hull Grammar School was brought to the spot in consequence of the discovery; and during the day Sir Henry Cooper, M.D., and other scientific gentlemen, also examined the extraordinary phenomenon. A tube, three inches in diameter, and six feet high, was added to the one which was a few inches only above the ground, and the water and the gas still flowed freely together, but after a time the water ceased to rise so high, and gas only escaped. At ten o'clock on Tuesday morning, Mr. Sollitt stated that the quantity of gas which had escaped the orifice—supposing it to have continued with the same force as he witnessed—would, from five o'clock on the preceding afternoon, have more than filled the largest gasometer at any of the gasworks in Hull, and would, in fact have been sufficient to light during the night all the streets in this town of 100,000 inhabitants.—*Hull Packet*.

NEW MEDICAL PERIODICAL PUBLISHED IN FRENCH AT CONSTANTINOPLE.—We have received several numbers of the *Gazette Medicale d'Orient*, written in French, and containing some articles of interest. This journal appears once a month, and is published by the Imperial Medical Society of Constantinople. In the first number is a clever "feuilleton" (a lightly written composition which accompanies nearly all French medical journals, in which subjects more or less remotely connected with medicine are treated in a familiar manner, with a tendency to humour and wit), on the unbounded freedom with which any one may practice medicine in the Ottoman empire. A parallel is sketched in this respect between Turkey and England, in which latter country the author says that no kind of restraint exists as to the practice of the healing art. We wish our contemporary much success. On glancing at the list of members of the society, we find, amongst the subscribing members a few English names, as Edwards, Foote, Macarthy, &c., on the list of honorary members are Mr. Lawrence and Drs. Simpson and Stokes; amongst the corresponding members, Drs. Bryce, Lawson, Little, Woollaston, &c.

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Practical Lectures

ON THE

MANAGEMENT OF THE DIGESTION IN DISEASE,

*Delivered during the Summer Session of 1857, at
St. Mary's Hospital,*

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(Continued from September No., page 181.)

LOCAL WEIGHT, TIGHTNESS, DISTENTION, sometimes a feeling expressed as being "blown out with wind," while on examination the epigastrium is found not more tumid than that of a healthy person digesting, are modifications of a sensation produced in the nerves of the stomach itself.

(1.) *Alone.*—Where it exists alone, unaccompanied by soreness, by pain on pressure, or by decided pain immediately after eating, it is possible to judge of the real meaning of the phenomenon. But in complicated cases the difficulties presented are very great. Putting then aside for the nonce these latter, and looking only to the simple examples, I have come to the conclusion that it denotes simply the presence of an *excessive secretion of mucus in the stomach.*

Like other mucous membranes, that of the stomach may be affected *acutely or chronically.* The first case may be called "gastric catarrh;" the second, "mucous flux." Both are liable to be followed by vomiting, which relieves temporarily the distress, and in the acute form constitutes the ordinary "bilious attack," so called from the bile which the action of the diaphragm in vomiting causes to regurgitate along with the contents of the stomach. When not rejected by vomiting, the aliments are so enveloped in mucus, that they cannot be acted upon by the gastric juice, and are passed very little changed into the bowels, where they are liable to ferment, and by

their acidity, cause diarrhœa, flatulence, and mucous stools. This latter result is more common in acute than in chronic cases, where the motions are often infrequent and irregular, and exhibit unformed or scybalous fæces.

When vomiting occurs, the ejected matters are mixed with so much mucus that there is no difficulty in making the diagnosis; but where it does not, the case is liable to be mistaken for one of disease of the bowels, on account of the flatulence and mucous diarrhœa. Certainty of diagnosis can in such cases be obtained only by the administration of an emetic, which brings the source of the evil into the light of day.

In acute cases this excess of mucus is often accompanied by very intense headache, but in chronic it seldom goes beyond a feeling of stupidity. Flushing of the face, and heat at the back of the eyes are also nervous symptoms dependent upon the chronic condition, and seem quite independent of any disturbance of the circulation.

Bilious attacks, or "acute catarrh of the stomach," is like all other catarrhs, excited by external, and often by epidemic influences. Changes of temperature are its most frequent cause. But still like them the cause must have a special reason in the individual for selecting one mucous membrane rather than another. And since the natural warm position of the stomach, aided by the usual habits of dress, guard it very efficiently against ordinary variations of the weather, the idiosyncrasy of the individual has a preponderating influence in its production, and often leads the others to be overlooked. But in the prevention of the complaint, more is to be done by attending to them, by protecting the stomach against such deleterious agents as the habits of the patient expose it to, than by trying to alter the diathesis of his body.

On the other hand, mucous flux, or "chronic catarrh," is much less dependent on external circumstances, and much more on organic changes

either in the stomach itself or some other viscus. Tubercular deposits in the lungs, emphysema of the same organs, chronic bronchitis, and enlarged heart, most frequently produce it, and it is usually associated with cancerous, tubercular, and inflammatory affections of neighbouring parts, but *alone* it is very uncommon. In this it closely resembles bronchial flux, and like it requires more attention to be paid to the causes internal to the body than to external circumstances.*

(2.) *With soreness or pressure* (more especially if the soreness exist also when the stomach is empty), or if accompanied by a decided pain arising from the ingestion of food, it denotes that the secretion of mucus depends on some *local inflammation or ulceration of a chronic character in the mucous membrane*. Where a tumour can be felt, the probability is that it is of a cancerous nature. Where there has been bloody vomiting, the diagnosis of ulcer, cancerous or non-cancerous, is almost certain.

In all cases, I am inclined to think that the peculiar sensation here described depends on the general state of the mucous membrane, and not on the local injury to one part or another of the stomach. My reason for thinking so (and it is a reason of practical importance) is, that it is capable of so much relief by medicines, even in patients where the spot anatomically altered is found afterwards to have been gradually progressing. You may very likely remember a man who lay in Albert ward, during the greater part of 1854, with rapidly-growing cancer of the liver and pylorus. In spite of the continual increase of the necessarily fatal tumours, the distention and weight after food diminished, he rarely vomited his meals, and was able to eat largely. His being able to eat a great quantity of nutriment much prolonged his life, and his illness on the whole was not one of much distress. So you see that the treatment of even necessarily fatal cases is capable of adding much to the comfort of our fellow-men, and is well worth the thought and attention of a serious mind.

It may be observed, that where distention with soreness is dependent on local inflammation of the stomach, the pain is constant, at no time entirely absent, though increased by the ingestion of food. You may see a well-marked case followed out in Case-book xxxix., p. 424 (where the complete cure seems to show that there was no

ulceration), and several others scattered through the books and indexed as "*Hæmatemesis*" (where the throwing-up of blood seemed to indicate that lesion), in all of which the discomfort is described as never quite wanting.

The excessive secretion of mucus in the stomach, whether arising from ulceration of the membrane from chronic inflammation of it or neighbouring parts, from adhesion of the peritoneum restricting the peristaltic movements, from simple degenerative thickening of the secreting structure, from cancer, from external pressure (as in the case of cobblers or tight-laced women), is indicated by the sense of distention above-named. But the evil rarely stops here. The gastric juice that is poured out cannot penetrate the slimy layer that envelopes, as in a bag, the mass of aliment, which consequently ferments and produces all the evils arising from chemical decomposition in the stomach. And if the solvent secretion could get to them, it would be neutralized by the alkali of the mucus, and so rendered incapable of dissolving albumen. Hence heartburn and acidity arises, as before explained; and hence, in some constitutions, vomiting, in others a passage of the fermenting mass into the bowels, and diarrhoea.

Mucus itself appears singularly incapable of digestion. When children with catarrhal coughs swallow their sputa, you may often find it unaltered in the stools. If you try to dissolve it in artificial gastric juice in the laboratory, small lumps undergo no change after several days. Still more, when the extensive surface of the stomach secretes a large adherent mass of a peculiarly stringy and firm sort of this substance. It is often thus passed in large quantities through the bowels, and induces a suspicion that some part of the latter organs are the seat of the evil. And, indeed, the diagnosis is not easy. The best guide to it is the observation of the contents of these masses of mucus. If you find enveloped in the glairy slime merely brown granular matter, hairs, threads, the cellular tissue and husks of plants, bits of gristle or skin, bile, or anything developing the natural smell of fæces, then you may fairly conclude that the mucus comes from the bowel; but if there are bits of food uncoloured by bile,—if, instead of smelling like fæces, they are putrid, or exhale an odour like vomit, it is certain that some, and probably the greater part, of the mischief lies in the stomach. Thus you see that the digestive function, in the cases we are now considering, is "*painful*" and "*imperfect*," but by no means necessarily "*slow*;" indeed, in many cases, the little digestion that goes on is performed with too great rapidity.

The indication of a mucous condition of stomach is as follows:—First, It must be remembered that it is *not only the evidence of disease* (like the flow from the nose in nasal catarrh, for example, which does no injury after it has once flowed out), but it is also *the cause of further evil*. Hence it must be *directly restrained by astringents*.

Secondly, *The place of the patient's own gastric juice, which cannot get at the food, must be supplied*

* In 25 post-mortem instances of excess of mucus adherent to the walls of the stomach—

6 had tubercles or vomices in the lungs as chief cause of death.

4 had diseased hearts as chief cause of death.

7 had oedema or emphysema observed after death, or chronic cough observed during life, as chief cause of death.

In the above 17, it may be considered as self-evident, that there was an increased secretion of mucus from the bronchi as well as from the stomach.

Of the remainder—

4 had diseased kidneys as chief cause of death.

1 pneumonia (in both of which chronic cough was not unlikely).

1 had cancerous, and

1 tubercular disease of the peritoneum.

1, a child of four months, had acute inflammation of the bowels, and the mucus was an evidence of gastric fever, not of chronic flux.

(See "*Digestion and its Derangements*," by the author, p. 358, with the references to Dr. Jones's paper.)

with artificial solution of the aliments, and their decomposition must be prevented.

Thirdly. *Alterative* diet and medicines, and *local counter-irritants*, must be used to relieve the congested or degenerated state of the organ at fault; especially in cases complicated with pain.

Of astringents, I have found none act more directly than kino; and where there is pain at the cardiac extremity of the stomach, heartburn, pyrosis, the conjunction of opium with it, as in the *pulvis kino compositus* of the Pharmacopœia, increases its efficiency. Larger doses of opium, however, in quantities sufficient to produce soporific effects cause headache. A good test of the extent to which it is desirable to administer astringents, may be found in their action over the bowels. Whilst doing good, they cause no constipation; and even, in some instances, relieve that symptom by removing the general state of irritability and discomfort, and by checking the discharge of mucus; so that it may be made a rule to continue them only so long as they do not confine the bowels.

Nitrate of silver is a very powerful astringent. But it is of no use unless you prevent the salt from being decomposed and converted by the chloride of sodium of the mouth into the inert chloride of silver. The best mode of securing it is to cover the pill thickly with gelatine, so that it remains undissolved until it gets to the right seat of action.

The sulphate of iron is also a very valuable astringent, especially in anæmic cases. I have found it a good plan to commence with the nitrate of silver; and when obliged to leave that off for fear of turning the complexion black, to commence the iron, and continue that until complete re-establishment of health. Ferruginous waters, especially those containing the sulphate (such as the Moffat and Hartfell chalybeates), or any others where the metal is made into the sulphate by the addition of a few drops of sulphuric acid, will, of course, be equally beneficial—indeed, often more so from the addition of change of air and scene.

Another form of iron which I have found very useful in gastric cases, is "iron alum;" but I cannot detect any difference in its action from the ordinary copperas above recommended.

Gallic acid is also useful, if a variety of astringents is required. But, to say the truth, I have been unable to detect any advantage which one of this sort of medicine has over the other, and think the only use in having a long list is to be able to ring the changes upon them to prevent the patient wearying of uniformity.

The arrested solution of the aliments may be partially compensated for by a diet of milk guarded from coagulation by lime-water, so as to postpone its digestion to the intestines. The avoidance, too, of such articles as are apt to form a solid mass will do much; and for this reason pastry, new bread, and hard meat, or fish, must be strictly proscribed. But the most complete substitute for the patient's own natural secretion, is pepsine artificially prepared. It enables solid albuminous food to be taken without distress, in-

creases the appetite, and raises the strength. In the milder cases, lactic acid, taken before food, is sufficient.

The most efficient agent in preventing the decomposition of albuminous food (evinced by fœtid evacuations, acidity, &c.) is sulphurous acid combined with soda. There are two forms of this salt, the sulphite and hyposulphite. Of these, the former contains most sulphurous acid, and certainly does the work required of it most readily. But then it has the bad quality of completely destroying the potency of gastric juice at the same time, so that while you are preventing the chemical decomposition you are also preventing the vital digestion. The hyposulphite has not this pernicious effect, and may also, from its less nauseous taste, be given in larger doses, so that by its means you are able to do the good without the harm.*

By "alterative" diet I mean a restricted supply of nutriment, so that the destruction of effete tissues should somewhat exceed the supply. This for a short period seems beneficial in cases where there is an organic change in the tissue of the stomach itself. But the treatment must not be carried too far: a week is, perhaps the extreme period to which the starving system should be carried: if it does not do the good expected in that time, it never will.

The same cases are benefitted by counter-irritants, such as leeching, blistering and long-continued water-dressings to the epigastrium. The advantages of the first are, that their application is soonest over, and gives relief most rapidly, while at the same time it does not prevent the use soon after of the other local remedies. The fear that this little loss of blood will lower the patient is theoretical; for the increased power of digestion adds twice as much blood and flesh as the leeches can suck away. In Case-book No. li., page 223, you will find the case of a patient of mine who was leeches on the epigastrium for some time every other night, yet gained twenty-one pounds in weight during her six weeks' stay in the hospital, so great was the relief afforded in her form of indigestion. The advantage of the wet compresses as a counter-irritant is, that they do least harm, though at the same time it must be confessed that they do least good, and are scarcely adapted for severe cases. However, in the milder, especially where the person is not so ill as to be kept from ordinary business, this method of accomplishing your object is very convenient.

The use of mercury is beneficial just in about the same degree as the alterative diet above-mentioned: immediately it has begun to have any good effect it must be left off, or it will begin to do harm. It is excellent as an inaugurator or introducer of good, but it does not carry it on without the evil results showing themselves. The utmost care must be taken that it does not specifically affect the system, or purge. As an universal rule, purgatives, and especially mercurial purgatives, do harm.

* See "Experiments on Artificial Digestion," by Dr. Chambers, in a previous number of THE LANCET.

"OPPRESSION" is often complained of at the same time with the Weight, Tightness, or Distention at the epigastrium. But it means something more, and is by no means identical. Indeed, in those worse cases of mucus on the stomach, which relieve themselves by vomiting or by rapidly passing on the alimentary mass, there is no oppression at all. On the other hand there are frequent instances of much discomfort where the patients do not at all assent to the description of a weight at the pit of the stomach. That is a purely local feeling, referred, in a former part of this lecture, to the local nerves; whereas *this* indicates a general feeling of morbid lassitude and physical incapacity throughout the whole body. There is a confusion of ideas, sometimes an unnatural sleep, sometimes faintness, irregular nervous action, such as flushing of the face, palpitation of the heart, fidgets, twitchings, or cramp.

As I said before, these are often the accompaniments of gastric mucous flux, but at the same time they often exist without it; and, indeed, almost anybody may bring them on by getting very tired and then eating largely. If vomiting occurs, you see no mucus in the *egesta*, but simply the food last taken in, unaltered in quality or appearance. Digestion is more than slow, it has completely stopped.

Oppression shows an exhausted condition of the muscular and nervous system of the stomach. The peristaltic motion is null from want of power. The causes usually are those which exhaust the nervous energies without stimulating the powers of life, such as prolonged and severe intellectual labour, annoyance of mind, and overstrained attention. Temporarily, and in persons previously disposed, mere corporeal exertion may bring it on; but this form of depression usually works its own cure, and does not become a chronic habit; for the excessive bodily toil either causes a reaction of increased nutrition, or so exhausts the voluntary muscular system that it cannot be proceeded with.

This view of the pathology of the disorder obviously suggests the appropriate treatment, which is, to tone and invigorate the involuntary muscles of the stomach. I have found no remedy do this so invariably as Strychnine. Should *anæmia* be present, Iron—if heartburn, acidity, or water-brash be joined, then Bismuth can be added; but where the symptom named exists alone, or predominates above the others, still more if bark, iron, or other tonics in any way disagree, nothing affords such satisfactory results as the alkaloid principle of *nux vomica* above named.

WEARING OR BORING PAIN commences gradually soon after food; it is confined to the epigastrium or extends itself over the abdomen and does not run up the *œsophagus* like heartburn. It sometimes is relieved by vomiting, and if not, continues with more or less intensity till the stomach empties itself through the pylorus. The pain is increased by pressure, very often, however, not immediately, but in the course of a minute or two, as if the sluggish sensation of the part took some time to appreciate the injury.

This sort of pain is nearly always sufficient to establish the diagnosis of ulceration; even cancer does not cause it, so long as the mucous membrane be whole. The diagnosis is strengthened if weight and tightness of epigastrium be present to indicate the excessive secretion of mucus which usually accompanies chronic ulcer; and is further confirmed by the occurrence of bloody vomiting.

This form of pain can seldom be removed by internal remedies. Those which do it most good are Bismuth, Opium, and Kino; but counter-irritants to the external surface of its seat, leeches, blisters, continuous poultices, mercurial and opiate inunctions, are of much more marked benefit.

It is in this case especially that the failing organ requires to be spared work. The best dietetic substance is milk made alkaline with lime or soda water, given in small quantities as frequently as possible. Next to that, a mouthful of mutton chop at a time, with doses of pepsine to digest it. Meals are painful, your patient tells you, so advise none to be taken, but a continuous sparing supply of such food as may pass through the stomach without distending it, and may be digested by the small trickling of peptic juice in the stomach and bowels. The chief object of the lime-water is to prevent the milk forming a large curd, but it also may be a sedative to the raw surface, just as it is to a blister or burnt skin.

CRAMP OR SPASMODIC PAIN in the epigastrium appears to arise from the pyloric sphincter. It is often accompanied by cramps in the neighbouring and remote muscles, thus affording an indication of the tissue in which its seat is to be looked for. It occurs chiefly in old persons, during the latter part of the delay of the food in the stomach, and does not show any local disorder of the organ.

The immediate relief of spasms of the stomach by stimulants, especially alcohol, seems to hint that it is by exciting the peristaltic muscles to action that we can hope to be useful; and therefore I should be disposed, on physiological grounds, to expect benefit from Strychnine, but I have not given it often enough, not sufficiently independent of hygienic measures, to be able to say whether or not it is of use.

ERUCTION AND VOMITING.

ERUCTION is the passage upwards through the *œsophagus* of air contained in the stomach. It must be remarked that the gaseous contents of the hollow viscera are in a different position from the liquids and solids; their great expansion by heat, and their low specific gravity giving them an inherent expansive force, which enables them to find their way out without any aid from the muscular system. There is no fluid so light but it requires the action of the expiratory muscles to expel it from the stomach, whereas no gas is so heavy but that, when warmed by the body, it will not rise through the *œsophagus* directly that the tube is relaxed.

The first condition, therefore, of eructation is the relaxed and open state of the cardiac end of

the gullet. The air, instead of being retained by the natural contraction of this powerful sphincter, finds its way into it in greater or lesser quantity. The passage of the bubble upwards almost always, except in completely paralytic patients, causes a reaction, and by the time it gets to the fauces it is compressed by the stimulated muscles, and expelled with considerable force. Hence the noise is greater than is caused by the mere bubbling of air up the gullet, such as you produce in moving a dead body. There is, therefore, a compound of relaxation and reactionary spasm, the former, however, prevailing, and taking the initiative.

The analyses of the gas contained in the stomach, by Chevreul and Chevallot, show that more than four-fifths of it is atmospheric air, and the rest is carbonic acid in much less proportion than what is passing out of the mouth by expiration.* So that we have clearly not to seek far for a source of the air; it is evidently swallowed with the food and saliva in the great majority of cases. Some persons also have a trick of half-consciously swallowing air, like crib-biting horses, especially when suffering from some uneasiness in the digestive organs; and in the paroxysms of sobbing, of hysteria, and of epilepsy, large quantities are gulped down. And it is not impossible that air might be secreted by the mucous membrane, though I am not aware of any case that proves the occurrence.

Another morbid condition that helps to produce the flatulent collection of gases is Defective Absorption. In health, gases are very easily absorbed by the alimentary canal. It is the normal thing for the abdomen to be dilated during digestion with several pints of air, which disappear in a short time without passing upwards or downwards. To be convinced of this fact is exceedingly easy, by observing the extent to which the parietes of the belly are distended, and the descent of the diaphragm impeded, so as to shorten the breath, after even a light meal of even a few cubic inches of victuals. In a few hours it has all gone without making any sign of sudden departure, in a healthy person. But in an invalid, body absorption is not so active. The gas normal to digestion is not taken up, and remains to disturb the patient by its continued presence. Should the œsophagus be in its natural state—that is to say, equally contracted throughout—the aerial contents of the stomach may be passed on through the pylorus, to produce, perhaps, the state of flatulence, which will be considered in a future lecture. Should, however, that tube be relaxed, then they break upwards in eructations.

So far, the bulk of air swallowed has been supposed to be increased only by heat and expansion. But in some cases it is farther augmented by gases disengaged from the decomposing organic matters of the food. The occurrence of the alcoholic fer-

mentation sometimes in the digestive canal, is proved by instances of vomiting, in which the matters ejected are seen actually undergoing this chemical change. They are frothy and tumid, continually swelling up and throwing up bubbles of carbonic acid, like yeasty beer. You have lately seen a man in Cambridge ward in whom this condition of the ejecta was very conspicuous. Half a pint of vomit, if left to stand, soon frothed up, and ran over the edge of a vessel holding two quarts. You can easily imagine what a disturbance in the stomach all this frothing and boiling must make, and are not surprised at the rejection of such a turbulent guest.

Fortunately, the spread of alcoholic fermentation through the saccharine contents of the stomach is a rare occurrence. Its features are so marked, and the discomfort it causes is so great, that we should hear a great deal more about it were it common. The fact is, that even where it begins and gives rise to the disengagement perhaps of some carbonic acid, it is rapidly stopped by the conversion of the sugar into lactic acid, which is more congenial to the temperature of the body. So that the "Acidity," which in a former lecture has been spoken about as an evil, is the guardian against a still more serious evil.

It will be easily seen, from what has gone before, that the morbid states of which eructation is a phenomenon, naturally arrange themselves into three groups—(1) *where there is simply a relaxed œsophagus*, (2) *where there is an increased quantity of atmospheric air swallowed*, and (3) *where foreign gases are formed from chemical decomposition*.

In the *first* may be included many cases of heartburn. The quantity of air brought up is small, but it seems to relieve the discomfort, probably by its stimulating the painful organ to contract—just as moving a cramped limb cures it. It may be observed that these cases are made much worse by motion; I have been told by several patients, that if they kept quiet after a meal, they experienced scarce any inconvenience, whilst exercise at such a time invariably brought on eructations, hiccough, and heartburn. Sometimes the eructations are the most prominent symptom, and the heartburn is very slight.

Under the same category may be classed cerebral diseases of a paralytic kind, where the partial loss of power in the œsophagus frequently causes eructation.

In these instances, the eructations usually occur very soon after meals, and have very little explosive character.

In the *second* group come hysteria, epilepsy, and chorea. Watch a patient in an hysterical or epileptic fit, and you will see great gulps of air bolted down. In chorea, too, you may often detect by the eye or touch the involuntary spasm of the gullet, which swallows whether any solid matter is present or not. There is often, too, at other times, especially in hysteria, a spasm of the œsophagus well known as *globus hystericus*. And less marked manifestations of the same phenom-

* See a comparison of the different gases of the alimentary canal as analyzed by Chevreul, Marshand, and Chevallot, in the author's work on "Digestion and its Derangements," book 1. chap. 12.

non, uncomplained of by the patient, or called simply "heartburn," occur constantly during the day, and fill the stomach with air.

The excessive swallowing of air is often associated with a large or dilated stomach, but I cannot satisfy myself whether it is cause or effect; I am inclined to think the latter, for the following reasons: you find these dilated stomachs principally as the result of some mechanical pressure or drag on the organ from *without*,* and therefore I do not know whether repletion from *within* alone would cause a permanent increase of area, more especially repletion with a substance so easily got rid of as air; while at the same time it is easy to imagine that a large, heavy, empty stomach, dragging upon the cardia, should give rise to an instinctive gulping.

In this class of cases, the explosions of air occur at various times, but most markedly and most inconveniently immediately on swallowing food or drink. The air thrown up has little or no taste or smell.

In the *third* group, where the gas is really generated in the alimentary canal, the eructations occur much later after eating—sometimes not till the time when, nominally, the stomach ought to be empty; and if they do come close upon the meal, they continue much longer, and do not give the apparent relief which is experienced in the other cases.

The gases thus eructated are nauseous and fetid, sometimes with the odour of sulphuretted hydrogen.

In these cases, there is almost always mucous flux of the stomach, sometimes from anatomical changes in some part of the organ, sometimes without. The *rationale* appears to be, that organic matters in a state of decomposition remain adherent in the mucus, and act as ferments to the newly-received food. Perhaps, too, the mucus itself may decompose. You know how quickly that takes place in urine, and how soon its decomposition is communicated to the rest of the fluid in or out of the body; and the same is likely enough to happen in the alimentary canal. The decomposition of the mucus is confirmed by the frequency with which different sorts of low organic growths (moulds) are found in it. The cryptogam, *sarcina ventriculi*, is the most distinctly marked of these, and though detected occasionally elsewhere, certainly finds its most congenial home in the stomach. In other places it has been found a floating wanderer in fluids, but in the mucous membrane of the stomach it may be seen fixed, growing in the mucus. It is not often that an opportunity occurs of proving to the eye that such is the habitat of the *sarcina*—we

frequently find it vomited, but the patients rarely die during their illness, the complaint not being a fatal one. Two years ago, however, one such opportunity offered itself in a girl of thirteen, who died in this hospital of enlarged heart. She had frequent attacks of mucous vomiting, without *sarcina*, a few weeks before death, and at the autopsy, we found the seemingly healthy great curvature of the stomach thickly clothed with a stringy mucus, very difficult to detach, in the outer layer of which a great quantity of *sarcina* were imbedded.

Being fixed thus in a permanent home, as shown by the above-quoted rare case, and rapidly replacing those which are wiped away by the food with new growths, the *sarcina* is unfortunately by no means idle. A great number, perhaps all, of those cryptogamous plants whose nature is to grow upon decomposing organic matter, have the property of promoting decomposition, so that they are not only the consequences, but the causes also, of decay. It is found that the gutta-percha covering to electric-telegraph wires, when laid down near the roots of oaks, becomes rapidly rotten from the presence of a fungus peculiar to that tree. Put jam in a new cupboard, and it will keep much longer than in an old one, where mould has previously grown. Economical housewives have sometimes what they call a "vinegar-plant;" it is, as I show you here, a fungoid vegetable found in vinegar casks. If placed in sugar and water, it makes the whole undergo the acetous fermentation in two or three weeks, instead of the process occupying several months. The mould found in yeast, the *torula cerevisia*, though not essential to alcoholic fermentation, certainly augments the rapidity of its induction; so that it is entirely in accordance with known physical laws, if the presence of *sarcina*, or yeast plant, on the mucus of the stomach should bring on fermentation in the food before the obstructed absorbents have time to take it up. Both have been found in the contents of the stomach ejected; and it is shown by the case I quoted, that *sarcina* at least may exist adherent to the mucus without being thrown up. So that whether seen or not, they probably very often, if not always, are the promoters of the very rapid fermentation which takes place sometimes in the stomach.

Besides producing eructation, the fermenting of organic matters in the stomach is almost always followed by vomiting; while, if it takes place in the bowels, the consequence is diarrhoea, two phenomena which will be considered shortly in their own place.

The indications of treatment afforded by eructation, are different in the three groups of cases in which it occurs. In the *first*, antacids are often sufficient for temporary relief. Four grains of rhubarb-pill, with a grain of gallic acid, taken before dinner, is still more useful; for the tone thus given to the mucous membrane prevents the recurrence of the inconvenience. In more severe cases I have found a rhubarb draught with

* In 18 cases of dilated stomach which I have noted—
 8 had gastric cancer (St. George's post-mortem book);
 2 had chronic ulcer (ditto);
 2 had dropsy and diseased liver (ditto);
 1 had ulcerated œsophagus and distorted ribs (St. Mary's post-mortem book);
 1 has a pendulous tumour attached to the pylorus (alive);
 8 have very fat, heavy omenta dragging down the stomach (alive);
 1? healthy.

gallic acid, taken three times a day, a very efficient remedy.

In the *second* group, where excess of air is swallowed, valerian and ammonia are very beneficial. Where there is nausea or vomiting, the valerianate of zinc may take their place; but it is not so certain as the infusion or tincture of the herb. Where this fails, use strychnine, which you have seen in the wards to be the most powerful agent we have to steady irregular nervous action, as hysteria, chorea, &c.

In the *third* group, the great object must be to prevent decomposition. In the laboratory you find that no agent is so powerful in this respect as sulphurous acid; and, accordingly, it is much used in various processes of the arts for the purpose. Sulphur is often burnt in casks to arrest the fermentation which is apt to be going on in the liquids soaked up by the cracks or porous parts of the wood, and the sulphurous acid vapours effectually do their duty. The Board of Health, so well represented in this parish by my accomplished colleague, Dr. Sanderson, finds no disinfectant for fetid sewers so instantaneous in its action as Macdougall's, the chief ingredient in which is sulphite of lime. Meat may be prepared on the same principle, and keeps as well as when salted or dried; and you may test, even on such a delicate substance as yolk of egg how fresh it keeps with any sulphite salt. The same effect is produced by taking as a medicine hyposulphite of soda;* the fermentation of the contents of the stomach is arrested, and the evil effects of that fermentation prevented.

Another powerful arrester of chemical changes is charcoal. When soup has begun to turn sour in hot weather, clever cooks boil it again with a little bag of charcoal in it, and it becomes quite sweet. The same agent will prevent decomposition in the alimentary canal. I have used it, I must say, only in cases where the decomposition occurs in the intestines, producing flatulence; but I should not hesitate to employ it in gastric fermentation also, if hyposulphite of soda chanced to disagree or was not beneficial.

Vomiting seems less than any of the phenomena previously discussed dependent upon the peculiar condition of the stomach, and more upon the idiosyncrasy of the individual. There are those who, whatever may be the matter with them, never vomit; whilst others do so on the slightest occasion. Even pleasant associations will, in some people, bring on this most unpleasant consequence: a patient of mine, a healthy young lady, is frequently seized with retching on entering a ball-room where she expects an agreeable evening; whilst it never happens in going to a stupid party. On the other hand, I have had patients with cancer of the stomach, and others with various sorts of severe dyspepsia, who could take the most nauseating drugs without inconvenience. The mere fact of vomiting, therefore, affords in itself no clue to the local condition

of the stomach. But the time of its occurrence, the circumstances which increase it, and the nature of the matters thrown up, may be most suggestive to the practitioner.

Vomiting which occurs when the stomach is empty, or which, though it occurs at other times, is most frequent and distressing then, may be safely set down as arising not from any fault of the viscera itself. Such is the morning vomiting frequent in pregnant women, in cases of diseased heart, of abdominal tumour, and sometimes of pulmonary consumption. This is no doubt a reflex action of the vagus nerve excited by the irregular irritation of some of its branches; and on the same principle I can easily understand the more rare cases where vomiting has been caused by foreign bodies in the ear or nose, by tumours in the neck, &c.

When vomiting occurs with a replenished stomach, it may be considered as a general rule that the smaller the quantity of food which produces it, and the sooner it takes place after eating, the nearer to the mouth is the seat of injury. Disease of the œsophagus causes rejection of the food before it has got down; of the cardia, or smaller curvature, very soon after it has got down; and disease of the pylorus, or pancreas, or liver, after an interval sometimes of as much as several hours.

When vomiting arises from congestion of the brain, as in apoplexy, drowning, concussion, or in dead drunkenness, it is increased by the horizontal posture; when it arises from deficient supply of blood, as in fainting, anæmia, and sea-sickness, that position relieves it.

The contents of the vomit, which can afford practical suggestions to the practitioner, are the following:—

Mucus, if it is in large stringy masses, shows a generally diffused morbid condition of the stomach itself; if it is in small round lumps, it has most probably been secreted from the bronchi and swallowed.

Blood, when it comes from an open vessel perforated by an ulcer, always is in considerable quantities, and contains black clots; if it is mixed up with mucus, brown and shreddy, it denotes a high state of congestion of the gastric walls, rupturing some small capillaries, or what is commonly called exudation.

Saliva, readily distinguished by its alkalinity, and the abundance of buccal epithelium contained in it; when in large quantities, it denotes an irritable state of œsophagus, and fauces; when it constitutes the bulk of the vomit of pregnant women, you will often find associated with it a sort of salivation in the mouth.

Fæces or fœculent smell. This is usually referred to a reversal of the peristaltic motion; but I do not think it necessary to resort to such a strained explanation. When we reflect that about twelve quarts of secretion is daily poured into the intestines it is easy to see that you have only to stop the onward peristaltic wave and absorption, for the ilia to get overfilled, and for their contents to

* I have before given reasons for preferring this to the sulphite. —See the Lecture in a former No. of THE LANCET.

overflow upwards into the stomach. There they naturally produce vomiting, just as they would if swallowed. Such a paralysis of muscles and absorbents takes place in peritonitis, as well as in mechanical obstruction of the ilia, and consequently in peritonitis you have sometimes feculent vomiting.

Fermenting matters in the vomit show the continuous retention in the stomach of some remains of the food or of vegetable growths in a constant state of chemical change. There is therefore present a quantity of adherent mucus capable of retaining them there.

Acid matters in excessive amount may arise from a similar state of things; but it appears as if simple torpidity of stomach, without necessarily the presence of mucus, can occasion it.

Pure unchanged food shows that the vomiting arises from the state of the nervous system, which is either *locally* irritable, from neighbouring anatomical changes; or *secondarily*, as in pregnancy; or *generally*, as in hysteria.

The remedial measures which I have found most useful in cases of vomiting are the following:—

Hydrocyanic acid, where it arises not from any fault of the stomach itself, but from the secondary condition of the nervous system, as in pregnancy, diseased heart, in abdominal tumour, in pulmonary consumption, in peritonitis.

Carbonate of magnesia, in the vomiting accompanying gastric mucous flux, with copious formation of acid.

Opium, in acute vomiting from gastric ulcer from malignant tumour, in fecal vomiting from perforation, peritonitis, internal hernia—in short, wherever the vomiting is accompanied by much local pain.

Chloroform, in the vomiting at the commencement of fevers. It may be applied either on a cloth to the epigastrium, especially in choleraic vomiting, or taken by the mouth.

Leeches.—Very often the vomiting in cases of gastric ulcer will not be appeased till some leeches have been applied to the epigastrium.

Milk and lime-water, as a sole diet, will often alone stop chronic vomiting. Complete rest and absence from excitement must accompany it.

Brandy, in teaspoonful doses, is a favourite domestic remedy. It is suitable in acute cases for the nonce, and will often stop nervous vomiting from mental causes, but is obviously not adapted for chronic disease.

Creosote.—This is a whimsical remedy, and I confess I cannot at all satisfy myself what cases it is suited to. The vomiting certainly seems checked by it sometimes, sometimes is aggravated, more commonly is uninfluenced. The cases where it has done good have appeared to me generally dependent on nervous causes. For example, it has been beneficial in hysterical vomiting.

Valerianate of zinc I tried once, in hysterical vomiting, with good effect. But in these patients the most powerful remedy is the *shower bath*.

Ice is often most useful in acute vomiting in fevers, in chronic cases of gastric ulcer, and in all cases is an agreeable remedy in warm weather.

The administration of food in cases of chronic vomiting is a matter of much importance. You must not let your patient be starved. Even when milk and lime-water does not check the vomiting, it is by far the best diet. In teaspoonfuls at a time, it can almost always be kept down.

You must not suppose the being starved to death from vomiting an hypothetical fear. A young woman came under my care a few months ago who had been deserted by her lover. She had had violent hysterical fits, and an utter inability to keep anything on her stomach for some days; the pulse was falling, and the tongue getting dry and brown. An attempt was made to retain life by means of nutritive enemata, but in vain. At the post-mortem examination every organ was in a completely normal state, and the catamenia were flowing from the uterus. Clearly she had died of starvation only.

When sea-sickness goes to the extent of making a person seriously ill, it is worth while to stop it or prevent it, as you can generally do by a large dose of opium. But it is very far from being worth while for healthy persons, or even invalids, in ordinary cases, to take this preventive; for a small dose is useless, and the requisite large one makes the patient endure much more discomfort afterwards than the sickness during the voyage would have caused. Chloroform does not arrest the nausea, but it certainly does seem to control the violence of the straining. The best remedy for healthy persons to take is very frothy bottled porter: if it does not in every case prevent the vomiting, yet the prostration afterwards is certainly avoided, and the ejecta are not so disagreeable.

Lectisomian Lectures

ON

MIDWIFERY,

*Delivered before the Medical Society of London,
May, 1857.*

By ROBERT BARNES, M.D.

ON THE PHYSIOLOGY AND TREATMENT OF PLACENTA PRÆVIA.

LECTURE I.

(Continued from September No., p. 185.)

THE practice advocated by Radford and Simpson was associated with a doctrine concerning the source of the blood different from that which had hitherto been received. The practice does not, indeed, as has been assumed, rest upon the physiological assumption as upon a logical foundation. The theory as to the placental source of the blood might be true or false; and yet the practice of totally detaching the placenta would not be indicated or excluded. There is no neces-

sary sequence. In the same way, authors whose practice was uniform, have differed entirely as to the anatomical question, whether there exist a direct vascular communication between the uterus and placenta. Authors have explained the phenomena they have met as to the origin, continuance, and control of hæmorrhage, on either hypothesis, and with equal confidence.

The hypothesis of the placental origin of the hæmorrhage is by no means new. Thus we find Levret saying, "Je suis d'accord avec tous les auteurs et les praticiens que le placenta en fournit aussi une partie." But more recently this hypothesis has been very distinctly stated by Mr. Rawlins, a surgeon of considerable repute at the close of the last century, at Oxford, who, in a very excellent "Dissertation on the Obstetric Forceps," published in London in 1793, says: "In flooding cases at the end of gestation, at the very onset, or during labour, it is generally advised not to wait for the natural efforts of the pains, but immediately on breaking the membranes, &c., to deliver by the feet, whatever may be the presentation; but I have conducted very safely many cases of this kind, where the head presented, entirely by trusting to the natural labour-pains; and to this I have been induced, first, to avoid certain accidents that may occur in turning a child . . . but secondly, and chiefly from considering the state of the circulation between the mother and child; from which it appears that the discharge of blood in such hæmorrhages proceeds more from the vessels of the detached portion of the placenta than from the denuded vessels of the uterus; for though, when the placenta lies on part of, or over the os uteri, as that orifice dilates, it separates a certain portion of the cervix uteri from a certain portion of the placenta; nevertheless, the blood cannot pass so freely from the vessels of the cervix uteri as from the placenta, although, granting, as the os uteri dilates that the vessels of the cervix are not contracted, yet it must be allowed that they are then so far attenuated as to be rendered in their diameter much smaller than they were before . . . no great degree of flooding can proceed from them, but on the contrary, from the vessels of the separated portion of the placenta, the blood may proceed freely, but yet not so much nor so readily from the *venal* part of it as from the *arterial* . . . and consists of that blood which would have been returned from the child to the mother, if there had not been a separation of a certain portion of the placenta from the uterus."

It is proper to bear in mind that Mr. Rawlins believed in the direct vascular communication between mother and child. This belief does not, however, detract from his claim to having anticipated others.

It is also to be observed that Mr. Rawlins does not draw from his theory the conclusion that the entire placenta ought to be separated.

The next author who expressed this opinion was the late Professor Hamilton. But the Professor did not any more than Dr. Rawlins proceed

to the conclusion that it was proper to wholly detach the placenta.

Dr. Simpson quotes the following passage from Mr. Chapman of Amptill. It contains, perhaps, the first suggestion of the practice of entirely separating the placenta: "From the expulsion of the placenta to the birth of the child was full four hours. How far does this suggest a different practice to that in general followed? I mean, that of delivering the child in those cases of alarming hæmorrhage where the placenta is situated on the side of the os uteri." ("Annals of Medicine," 1800.) It would appear that Mr. Chapman based this question, not upon any belief that the blood came from the placenta, but simply from the observation of a case in which the hæmorrhage stopped after spontaneous expulsion of the placenta.

The opinions of Mr. Kinder Wood have been published posthumously, and I know not whether completely. The following quotations are deserving of the most thoughtful attention.

"In some cases I have been called to attend when the ordinary method of delivery has been adopted; the patients died, and this led me to modify the practice, which I adopted in some of the above cases by detaching the placenta, rupturing the membranes, and then delivering the child; but after due consideration, I was again induced to vary my plan; and in those cases where we can have no hope of saving the patient if we proceed to delivery, however well the operation be conducted, I have no hesitation in recommending that the placenta be separated completely, and the membranes ruptured, that the hand be withdrawn immediately upon this being effected, leaving the child and placenta behind. By this practice, the patient will be placed precisely in the situation which occurs in the most favourable cases of delivery by the natural efforts. I conceive no fact in midwifery rests upon a more solid foundation than that this hæmorrhage will cease upon separating the placenta, and by this practice the patient is placed in as favourable a situation as is possible for recovery. Time will be gained to support her by proper means, and which can be used with greater freedom, as the hæmorrhage is infallibly suppressed by this operation."*

From this passage it would not appear that Mr. K. Wood was led to adopt the practice of totally separating the placenta in consequence of any theoretical ideas as to the source of the blood. His reasoning was from the presumed analogy between the case of the woman after detachment and expulsion of the placenta as well as of the foetus, and that of the woman in whom the placenta was detached, but still retaining both placenta and foetus in utero. Admitting the analogy to be perfect, his reasoning obviously fails in assuming that the hæmorrhage in the latter case is "infallibly suppressed." Why is the suppression of the hæmorrhage more infallible in this

* Dr. Radford, *Provincial Medical and Surgical Journal*, 1844.

case than in that where fœtus and placenta are delivered? Is there no such thing as post-partum hæmorrhage? I shall have, however, to recur to this doctrine of Mr. K. Wood.

The following is Dr. Radford's* account of the reasons which led him to adopt the practice:—

"I did not recommend this practice because I considered the rate of mortality high in cases of placenta prævia, but from the following circumstances: 1st, from having witnessed the spontaneous separation and expulsion of the placenta in several cases; 2ndly, from the results of a number of cases published, and others related to me by friends; 3rdly, in having in the year 1819 detached the adherent portion of the placenta from the os uteri, from which operation 'the hæmorrhage was immediately suppressed;' 4thly, from the practice of some of the older obstetric writers, Portal, &c.; 5thly, from having seen the malpractice of midwives; 6thly, from my knowledge that the late Mr. Kinder Wood had several times successfully performed this operation; his cases, five in number, are already before the profession. (*Provincial Medical and Surgical Journal*, vol. ix. p. 133, and viii. p. 603.)"

Dr. Radford was not, therefore, determined to this practice by any theoretical views as to the source of the blood. He has, however, supported with his authority those who contend for the placental source. The particular conditions which Dr. Radford lays down as calling for the artificial detachment of the placenta will be considered hereafter.

The principal grounds upon which Dr. Simpson advocates the complete detachment of the placenta are these: 1st. That he has collected a number of cases in which it was observed that the hæmorrhage ceased after entire separation, accidental, spontaneous, or intentional, of the placenta. 2nd. That he believes the source whence the blood flows, principally if not entirely, to be the detached surface of the placenta. 3rd. That he believes the maternal mortality under turning to be greater than that under complete separation of the placenta. 4th. That the infantile mortality under turning is so great, that it ought not to outweigh the advantages contended for, of separating the placenta. It will be necessary to examine these propositions further on.

Now, although I am very far from acknowledging the truth of all the theoretical doctrines, or the accuracy of the statistical data upon which some of the foregoing rules of practice are urged, I fully admit that both reason and experience have established that each of these rules finds its legitimate application. Even that method which has been the subject of the keenest animadversions, the complete detachment of the placenta, is, I believe, indicated and useful in particular cases. In expressing this opinion, however, I think it desirable to define it clearly, by stating that I prefer the limitations of this method laid down by Mr. Kinder Wood and Dr. Radford to the extensive range contended for by Dr. Simpson.

Arrived at this point of our inquiry, we find that the principle and line of treatment in hæmorrhage from implantation of the placenta on the cervix uteri, which had been considered definitively settled, have, within the last few years become the subject of controversy. The whole question has been reopened; and I cannot but think that the active and independent spirit of inquiry, that looks upon no law in obstetrics as so consecrated by time, authority, or experience, that it ought to be secure from assault, a spirit which constitutes the distinguishing merit of Professor Simpson, will result in more extensive knowledge and more enlarged therapeutical resources.

For the last few years the position of the obstetric world in relation to this problem in practice may be sketched as follows:

1. In cases of partial placental presentation, rupture of the membranes, the use of the plug, and other temporizing expedients, will generally be sufficient.

2. In cases of complete placental presentation, and in those of partial, where the flooding is unusually profuse, we have to choose between two methods: forced delivery, and artificial detachment of the placenta. But concerning this choice there prevail many conflicting opinions.

a. With some, perhaps many, there is no question in any case. These see no safety but in delivery, and condemn the practice of detaching the placenta absolutely.

b. Others, with Kinder Wood, would detach the placenta in those cases of exhaustion where forced delivery cannot be resorted to without peril to the life of the mother; or, with Dr. Radford, in those cases also where the os is partially dilated, where the membranes are ruptured, and where strong contraction exists—a condition, I presume, considered to contra-indicate turning; and also in cases of narrow pelvis.

c. Others extend their faith in this method to the full latitude of the precepts of Dr. Simpson. These would detach the placenta in all the following cases:—

1. When the os uteri is rigid and undilatable.
2. In first labours.
3. In premature labours.
4. In labours supervening earlier than the seventh month.
5. When the uterus is too contracted to allow turning.
6. When the pelvis or passages are organically contracted.
7. In cases of exhaustion.
8. When the child is dead.
9. When the child is premature and not viable."

In the not very probable event of a case occurring that should not fall under one or other of the preceding heads, it would remain to be considered whether evacuation of the liquor amnii or turning should be resorted to.

Here I may close the historical part of our subject. I will now proceed to explain what I con-

ceive to be the *true* anatomy and physiology of placental presentations.

CAUSES OF PRÆVIAL ATTACHMENT OF PLACENTA.

It would indeed be a triumph exceeding, because superseding all therapeutical improvements, if we could arrive at such a knowledge of the etiology of placenta prævia as would enable us to obviate the occurrence of this abnormality. That prophylaxis will ever supersede therapeutics in this matter can, however, scarcely be anticipated. Still it is eminently desirable never to lose sight of the fundamental question of etiology in our inquiries.

Why is it that the placenta is occasionally developed on the cervix uteri? It is well to ask first, why it is that the placenta is commonly developed at the fundus? Let the consideration of the law precede that of the exceptions. The reasons appear to be obvious enough. As the ovum emerges into the uterus from the orifice of the Fallopian tube, it is usually caught in a fold of the softened, thickened, and coagulated lining mucous membrane of the uterus in the immediate vicinity of the point of entrance. There it fixes itself, and there it grows; and that part of the superficies of the chorion which lies in apposition with the original seat of attachment naturally becomes developed into placenta, whilst the villi of the remaining part of the superficies disappear, or at least do not assume the placental character. It is a matter of doubt, however, in my mind whether there be one part of the superficies of the chorion which is primordially more especially destined to be developed into placenta than the rest. What part of the superficies shall be developed appears to depend upon the accidents of contiguity to the uterine mucous membrane, of disease, and other circumstances: that is, that part of the chorion which is in apposition with the decidua vera will be most disposed to furnish the placenta. But if we examined the pregnant womb and ovum at an early date, even as late sometimes as the fourth month, we perceive that the entire superficies of the chorion is in intimate and extensive vascular relation with the decidua. And even at the end of gestation, it is no uncommon thing to find that the villi of the chorion have not altogether disappeared from any part, but that there still remain numerous vessels all over its surface lying in contact with vessels of the decidua, and which may be regarded as analogous to the developed placenta. There is a beautiful specimen of an injected uterus and placenta of the eighth month in the museum of St. Thomas's Hospital illustrating this fact. There is another fact illustrating this position. In a most remarkable case of placenta prævia which I dissected, the placenta was found, at the end of the ninth month, spread over at least five-sixths of the entire surface of the uterus, leaving but a small space at the very fundus of the uterus which was unclothed by placenta. Why, it may be asked, did the placenta in this case spread itself so extensively? I believe the following is a rational conjecture:—The placenta

was everywhere extremely thin. The ordinary superficial development was insufficient for the nutrition of the fetus; more and more vessels were therefore called for, until they had formed a placenta of the enormous extent we see. Owing to the narrowing of the uterus towards its neck, it is highly probable that sufficient placenta cannot easily be developed in the case of prævial attachment without spreading beyond the usual limits, or acquiring very unusual thickness. Thus Levret has drawn especial attention to the shape of the placenta in prævial attachment; it is represented from nature in Hunter's well-known plate. The organ is much thicker in the middle than at the edges, and when placed on a flat surface it takes the form of a mamelon. I myself have observed that in cases of central attachment the placenta is commonly much larger than it is when seated at the fundus.



That the uterine mucous membrane can at any part furnish the uterine element of placenta is certain. The fact of our having to deal with placenta prævia is a sufficient proof. Why should not the chorion at any part furnish the fetal element? Facts seem to show that it may. The remarkable example I have just described is strong evidence. Further evidence may be drawn from the observation of specimens of extra-uterine pregnancy. In such cases, the ovum being lodged in an abnormal situation, ill adapted to supply sufficient nutriment for the embryo, it is not uncommonly found that the greater part or the entire surface of the chorion is developed into placenta. There is a well-marked example of this in Guy's Museum.

There is a form of placental growth by no means uncommon, which further corroborates the view that any part of the chorion may be developed into placenta, according to the requirements of the embryo. There are the *placenta spuria* and the *placenta succenturiata*, to prove

that true placental outgrowths may take place at a distance from the main placenta. Sometimes a placental mass of the size of a crown piece or larger is found wholly separate from the main placenta. This is not an unfrequent cause of secondary hæmorrhage after delivery. The *placenta succenturiata* remains adherent after the expulsion of the true placenta and the bulk of the membranes.

But there is yet another fact, of extreme importance in relation to this subject. I have been struck with the frequency with which præval attachment is complicated with disease of the placenta and fœtus. In examining and reflecting upon particular cases it has appeared to me that placental tufts may shoot out from one part of the chorion in preference to other parts, because some points, being diseased, are unfitted for efficient placental development, or because some parts of the chorion, itself healthy, may be in contact with an unhealthy portion of decidua. Thus, if the fundal mucous membrane is diseased, there will be a tendency to placental development on that aspect of the ovum which is directed towards the lower segment of the uterus.

Another circumstance illustrating the frequent complication of disease with præval placenta, is adhesion. It is important, however, not to confound the cases of true adhesion, in which there is organic change of structure, or abnormal deposit in the decidual portion of the placenta, with those more frequent cases in which the adhesion is merely the result of absent or ineffectual contraction of the uterus. We shall see by-and-bye that the muscular structure about the lower segment of the uterus is far less perfectly adapted to cast off the placenta than is the muscular structure of the fundus. This is one cause—a frequent one, and often unsuspected—of placental adhesion or retention. During my researches into the diseases of the placenta, many placentas have been brought to me, which having been retained, had been manually separated from the uterus on account of supposed morbid adhesions. It was rare to find in these specimens any trace of disease.

In a recent excellent paper, the present Dr. Legroux says, that placenta prævia mostly occurs in pluriparæ, and that it is due to the greater than normal enlargement of the uterus, which thus allows the ovum to spread its attachments lower than is possible in the more inferiorly contracted, or pyriform, uterus of primiparæ.

One circumstance has struck almost every observer, and that is, the frequency with which the præval attachment of the placenta has occurred in the same patients. Some women are, therefore, especially prone to this complication. Is it rational to conclude that some women are especially prone to an "accidental" attachment of the placenta to the lower segment of the uterus? No. It is not then an "accident;" but an occurrence depending upon definite and ascertainable causes.

I believe the etiological arguments thus enunciated are well-founded. They do not exhaust the etiological history. There are probably other

causes. To complete the list is, I submit, an object eminently deserving of research. We should not rest contented with the quaint evasion of Portal, that these things happen, "selon qu'il plait à la nature de se jouer."

DIAGNOSIS OF PLACENTA PRÆVIA.

Are there any signs by which we may discern the existence of placenta prævia before the occurrence of labour? This question is important, because, if we knew that this complication existed beforehand, we should be forearmed, and the better prepared to encounter the impending difficulty. Levret has examined the question with his usual acumen. He enumerates the following signs of central or lateral placenta:—

1st. The belly of the patient is not pointed, or rounded as a ball, but somewhat flattened.

2ndly. It appears as if it were divided into two parts, as in the case of twin-pregnancy; but that which essentially distinguishes the first case from the second is, that the division is not found exactly in the middle, nor according to the vertical line of the body, but more on one side than the other, and a little obliquely. Moreover, if we question the woman, she will admit that in the first months of pregnancy she felt a swelling, with hardness, in one or the other side of her belly.

3rdly. This hardness had gone on increasing, and had never changed sides.

4thly. This side is the most painful spot of the whole belly, and that in which she feels the movement of her child the least.

These signs are perhaps wanting in precision, but their existence in any given case should at least indicate more minute investigation.

Gendrin gives two signs. He says that a pulsation may be felt at the os uteri not synchronous with the mother's pulse; and, secondly, that owing to the interposition of the placenta *ballotement* cannot be performed. Neither of these signs is universally true.

It may be stated that the lower segment of the uterus is generally larger, softer, more fleshy than in ordinary gestation. The presenting part of the child either cannot be made out at all, or very indistinctly; and occasionally, when the os uteri will admit the finger, the quaggy placental mass may be felt. Sometimes a persistent dragging pain in a particular part has led to a stethoscopic examination, when the cervical attachment of the placenta has been accurately determined. This I have myself experienced.

Dr. Cohen, of Hamburg, has described the means of diagnosing placenta prævia in a paper to which I shall again have occasion to refer. His especial object is to determine which side of the lower segment of the uterus the main bulk of the placenta adheres to. He says the side of the uterus to which the main placenta grows is more swollen. In by far the greater number of cases this side is *painful*. The pain in the right epigastric region known to every accoucheur is a suffering so common in these circum-

stances that we regard the cases in which it does not appear there or on the other side as exceptional. Whenever this pain was strong, Cohen always found considerable fibrinous deposits in the placenta, and often stringy adhesions of the foetal placenta to the uterus. The smaller part of the placenta, he says, is attached either to the *right* or *left* side; so seldom to the fore or after side, that for diagnosis it is enough to examine the right and left sides.

Moreau places little confidence in the condition of the os and cervix. He says: "One only phenomenon may cause a suspicion of the cervical insertion of the placenta: this is the epoch at which hæmorrhages occur. Generally, they take place early in pregnancy, but they never arise before the moment when the neck of the organ begins to unfold itself. Most frequently, it is from the sixth to the seventh month."

The indications in diagnosis may be usefully summed up as follows:—

1. The general signs, such as flattening of the abdomen, division of the abdominal tumour, and especially swelling and pain in one side of the pelvis pointed out by Levret, should lead to minute exploration by the finger and stethoscope.

2. Abortions, disease of the placenta, dead children, and placenta prævia in former pregnancies, should also incite to minute physical exploration.

LECTURE II.

THE next question before us is one that embraces most of the points of cardinal interest in the physiology, pathology, and therapeutics of Placenta Prævia.

WHAT IS THE COURSE OF A LABOUR COMPLICATED WITH CERVICAL OR CENTRAL ATTACHMENT OF THE PLACENTA?

It will be convenient to discuss, in the first place, several questions connected with the attendant hæmorrhage. We have seen from previous quotations that the doctrines most generally inculcated are: that there is an essential difference between the circumstances attending the detachment of the placenta when adherent to the fundus and when adherent to the cervix uteri; that this difference consists in the separation of the placenta from the fundus without hæmorrhage, and from the cervix with hæmorrhage; that, in the latter case, the hæmorrhage is necessary, unavoidable, a condition inseparably dependent upon the nature of the process by which the mouth of the womb is opened. It is contended, in short, that contraction which, in the case of fundal attachment, secures against flooding, in the case of cervical attachment necessarily causes flooding. This proposition, as I shall show, physiologically erroneous; and, being so, is the foundation of erroneous pathological and therapeutical doctrines.

If we watch attentively a case of labour in which the placenta presents—I mean, of course, such a case as admits of simple watching, that

does not call for obstetric interference—we shall observe that as soon as the longitudinal muscular fibres of the womb have begun to contract so as to pull back the lower segment from the central point represented by the os uteri internum, a certain amount of detachment of the placenta from the part nearest to the os takes place; owing to the periodical and sudden nature of the uterine contraction, this detachment is also sudden; the sudden detachment is attended by a sudden escape of florid blood; the contraction ceasing, the flow of blood also, for the most part, ceases entirely, or subsides greatly; with the returning contraction, there is a fresh detachment of placenta, and another gush of florid blood; the contraction at an end the flow of blood again subsides. This order of events recurs in the same succession, perhaps several times. But, at last, if the child be not first extruded, a stage of labour arrives when the recurrent contractions of the womb do not entail any further flooding; the pains return in their usual course with their usual strength, and with their usual effect of further dilating the os uteri, and forwarding the labour; but there is no more hæmorrhage. The labour is resolved into a natural labour, and may be safely concluded by the natural powers. (Fig. 2.)

Now this history, true to Nature, is diametrically at variance with the still received dogmas, that the hæmorrhage is the necessary result of the expansion of the os uteri, and that there is no safety but in delivery.

Our obstetric annals record many cases not only of partial, but also of central placental presentation which followed the course I have described. They could scarcely fail to arrest the attention of the observers; to provoke the question, *Why did the hæmorrhage stop?* The true explanation has, however, been missed. The minds of the ob-

FIG. 2.



Figure 2 is a diagrammatic view of the progress of detachment of placenta. It is cast off in zones or rings, if the case is one of placenta centralis; and in segments of rings, if one of cervico-ortificial placenta. At A A, the dilatation of the os involves no further detachment of placenta.

servers of this striking phenomenon have been so pre-occupied with the prevalent *idola fori*, which

teach that so long as uterine contraction—that is official expansion—goes on, hæmorrhage must go on too, that they have either regarded this phenomenon as exceptional, or accounted for it by inadequate and accidental circumstances. And in spite of the frequency of this phenomenon, many, if not most practitioners, have seen in it no physiological or therapeutical lesson whatever.

So long as the practice so resolutely followed in every case of præ-partum hæmorrhage by Mauriceau, Portal, Levret, and the older obstetricians, shall be recognised and acted upon as the one and absolute rule, it must be difficult, if not impossible, to arrive at a true knowledge of the physiological course of a labour with this complication. The process of Nature is rudely interrupted before she has time to assert her power. It has been observed that in some—we will even grant, many—cases that were left to themselves, the unhappy patients died of hæmorrhage. It is thence assumed, that nature is *always* hopelessly at fault. The logic is bad; and, as is often the case, an unreasoning assent to an unqualified dictum has served to perpetuate error.

Their experience narrowed by this exclusive empiricism, some men have rashly denied the possibility of placental labour without hæmorrhage, or of the spontaneous arrest of hæmorrhage. They scout the proposition because it is contrary to their experience! forgetting that they have so restricted their experience as to have debarred themselves from the opportunity of witnessing what nature was prepared to reveal to them!

To digress for a moment, for the sake of an illustration. Some practitioners have been early taught by precept and example to believe that fever *must* be treated by the unlimited exhibition of brandy and other stimulants. Impressed with this doctrine they take care never to witness a case treated in any other way. They pour in brandy, and the patient recovers; he recovers because he was well treated! They pour in brandy, and the patient dies; he dies because he could not swallow enough! Under the influence of such preconception, a rational knowledge of the power of Nature is plainly excluded. How useful would it be could such men have the good fortune to observe a dozen fever patients treated on the principle of non-interference!

So it is with this case of placenta prævia. Nature declares and pronounces emphatically that the hæmorrhage is not in all cases unavoidable and progressive in proportion to the dilatation of the mouth of the womb. She protests against the assumption that in this great emergency she is altogether at fault, and powerless to arrest the flooding. Let not those who have never had the courage to trust her, the patience to observe her, or the skill to interpret her, too confidently deny her power.

The first great improvement in the treatment arose out of a more accurate and discriminating observation of cases. Puzos had seen that there were cases in which the hæmorrhage abated or ceased: he discovered that it was not always ne-

cessary to force open the wound and extract the child: he found that rupture of the membranes and evacuation of the liquor amnii was often sufficient. His judgment has been amply verified by experience. Another great improvement in the treatment arose in the same manner. It was observed that in many cases the hæmorrhage abated after a time; and it was sought to gain this period with safety by the application of the tampon, or plug. As I have before said, however, the true reason *why* the hæmorrhage stopped, escaped detection. Hence there does not exist a sound logical and physiological basis for a system of treatment. The modes of treatment as at present inculcated are essentially dogmatic and empirical.

Let me proceed with the development of my argument.

The following passage from Leroux (p. 258) clearly shows that the occasional spontaneous arrest of the hæmorrhage had been observed by him:—When hæmorrhage has continued some time, “*si la nature n'est pas trop affaiblie, les contractions se renouvellent, deviennent plus actives, l'orifice se dilate davantage sans effusion de sang et la tête s'avance.*” But he distinctly attributes this to the clots which form in the vagina; so intent, so preoccupied, is he with this as the cause, that he concludes the clots existed even when they are not mentioned; as when he says (p. 260), “*Portal a rencontré deux fois le même cas, et quoiqu'il ne fasse point mention des caillots, je suis porté à croire cependant qu'ils ont contribué à calmer la perte,*” &c. “*On en trouve aussi des exemples dans Smellie, qui a également oublié de parler des caillots de sang.*” It did not occur to Leroux as possible that Smellie and Portal might have omitted to speak of clots because there were none.

More than thirty years ago an excellent physician, Dr. Mercier, placed the following question at the head of an article as its fitting title: “*Les accouchements où le placenta se trouve apposé sur le col de la matrice, sont-ils constamment accompagnés de l'hémorrhagie?*”^{*} A pregnant question! Observation taught him to answer it in the negative. In his attempt to explain the *modus operandi* he was not fortunate. He says: “The uterine neck may thin itself, be obliterated and dilated, although the placenta adhere to it; this body may be detached and the labour end, in circumstances rare, indeed, *without the manifestation of hæmorrhage*, properly so called. But what cause can bring about so surprising an effect?” For his answers he appeals to an erroneous anatomy: he says “the placenta only adheres to the womb by apposition or contiguity;” he denies the vascular communication between uterus and placenta; and hence seeks to explain the absence of hæmorrhage by the absence of ruptured vessels.

Such cases as the following, extracted from Dr. Lee's “Clinical Midwifery,” are not uncommon:

CASE 1.—“On the 10th of November, 1841, I was called by Mr. Roach to a case of sudden and

profuse uterine hæmorrhage, near the full period of pregnancy. The quantity of blood discharged in an hour was very great, and was followed by syncope. The flow of blood had ceased when I saw the patient, soon after, and it did not return, though the edge of the placenta was felt detached, and slightly protruding through the orifice. The following morning, labour-pains came on, the membranes gave way spontaneously, and the child was born alive, without any artificial assistance. The placenta soon followed without any discharge of blood. She recovered quickly."

Moreau, although declaring in the strongest terms the unavoidable nature of the hæmorrhage, yet recognised its occasional spontaneous arrest. The following passage deserves attention: "On a prétendu, qu'il ne fallait sous aucun prétexte laisser à la nature le soin de terminer seule l'accouchement. Cette proposition nous paraît trop générale et nous citerons tout à l'heure des faits qui le prouvent."

He thus explains the mode of arrest of the flooding. At variance with most authors, he says the hæmorrhage diminishes during the contractions. "The bag of waters tending to escape is closely applied to the uterine surface, so as to render all communication with the exterior impossible; the membranes thus fulfil the office of a plug. But as soon as the pain ceases, the membranes collapse, the uterine neck relaxes, and the space between the two structures is enlarged, and the barrier thus removed, the blood accumulated above, escapes."

Caseaux observes, that "the hæmorrhage generally considered as inevitable in these cases, may, however, not show itself even during the progress of labour, and the dilatation of the cervix uteri may be effected without there escaping one drop of blood."

Dr. Zeitfuchs* relates the following cases:—

CASE 2.—"A woman was seized with great hæmorrhage. Plugging and temporizing were resorted to until the os was open to the size of a dollar; great exhaustion. Still he feared to operate. The bleeding stopped and did not return all night. In the morning, the patient had somewhat revived, when Dr. Z. determined to operate: he pushed the placenta a little on one side, and seized the head, which he fixed in the brim; pains came, and he left the rest to Nature."

The hæmorrhage had stopped; why was he so anxious to operate? I record this question, because I shall have hereafter to advert to the cases of Dr. Zeitfuchs.

The following is another case from the same writer:

CASE 3.—"There was great hæmorrhage at first; the placenta was over the os, but the membranes were felt; the os was open. He determined on the *accouchement forcé* at once; was obliged to give up the attempt, as the shoulder came into the os. He then proposed to extract by crotchet,

but the *bleeding ceased*, and the child was spontaneously expelled."

Another case:

CASE 4.—"Great hæmorrhage at first, and some exhaustion; plugged; then *no more blood*, although pains recurred and expanded the os. Dr. Zeitfuchs ruptured the membranes, and left the head to be extracted by the forceps."

How does Zeitfuchs explain the cessation of the hæmorrhage? "He believes there is no further danger of flooding if even the placenta is fully detached and in the vagina, if the *child's head or presenting part* is engaged in the mouth of the womb."

This is the prevalent opinion. It is that of Credé, who has put forth an unfounded and unintelligent claim to the true theory. To place the child's head or breech in the mouth of the womb, so as to make it serve as an internal plug for the bleeding vessels, is the constant object of solicitude. The remarkable fact has been overlooked that the bleeding has often ceased before the membranes were ruptured, and consequently before the child was brought into contact by pressure with the neck of the womb. We must seek further for the answer to our question.

Another explanation has been advanced. Dr. Simpson says: "The most rational idea seems to be, that in such cases the child has been dead some time, and the utero-placental circulation in consequence arrested previously to the supervention of parturition. But in relation to the objects of our essay, it is a much more interesting and important subject for us to inquire into the degree of hæmorrhage *after*, than the degree of hæmorrhage *before*, the complete separation of the placenta." It was Dr. Simpson's object to prove that hæmorrhage was the consequence of *partial* detachment of the placenta, and that it might be arrested by *wholly* detaching it.

The professor's explanation is absolutely excluded by two facts: first, the hæmorrhage stops before total detachment of the placenta, and whilst the child is still alive; secondly, the hæmorrhage may, and frequently does, occur in cases where the child has long been dead. Cases illustrating all these facts will be recorded in various parts of these lectures, and in the Appendix of Cases.

It is unnecessary to cite further evidence to prove that in many cases the hæmorrhage may be spontaneously arrested, and that hæmorrhage is not the unavoidable result of prævia attachment of the placenta. I am aware that these propositions are very authoritatively denied. I appeal from authority to Nature.

If now we analyze the various explanations given to account for the spontaneous arrest of the hæmorrhage, we may arrange them as follows:—

1. The explanation of Mercier, being based upon the erroneous idea that there are no vessels between placenta and uterus, may be at once set aside.

2. The explanation of Simpson, that the absence or arrest is caused by the previous cessation of the utero-placental circulation owing to the death of

* *Das Zeitschrift, für Geburtshunde*, 1848.

the child, is excluded by the facts I have referred to.

3. The explanation of Leroux, that the arrest is caused by the formation of clots in the vagina, would certainly not apply to the majority of cases. It is well known that even the most perfect plugging will not always be effectual.

4. The opinions of all the remaining authors may be summed up in one category. They all rest upon the assumption that the hæmorrhage is controlled by the direct effect of pressure upon the bleeding orifices. This last explanation may be accepted, but only, I submit, to a certain extent. It does not explain the whole case. The concurrent testimony of many excellent observers, and the adequacy of the cause itself, when fully in operation, to produce the effect, command our assent. But I contend that there are many cases in which the absence or arrest of flooding cannot be accounted for by pressure. We must question Nature further for a full and satisfactory reply.

I invite the candid attention of my hearers to the following case and commentary, because they contain, as I believe, the first distinct exposition drawn from clinical observation and anatomical reasoning, of the true cause of the absence, or spontaneous arrest of flooding in placenta prævia.*

CASE 5.—“Jane W—— has borne four children at the full term; has generally lingering labours. During present pregnancy has observed nothing unusual up to beginning of ninth month, when, having been subject to excitement and labour attendant upon changing her residence, she was suddenly seized with profuse flooding, partly fluid, partly in clots; great pains in the loins, followed by occasional giddiness and vomiting. Called to see her June 1st, 1846, at four P. M. She is rather a robust woman, of full habit; pulse firm, 80; skin and tongue moist; some thirst, sickness, pains in the loins, and violent pains in the belly; great anxiety and restlessness; feels pain, especially when lying on the left side. Examination per vaginam: Os uteri directed back to promontory of sacrum; the cervix nearly an inch long; the os barely admits the tip of the finger; the quaggy sensation communicated by placenta is perceived; presenting part of child not ascertainable, though from the irregularity and mobility of the parts, it is ascertained that it is not the head. The hæmorrhage is still profuse. Plugged vagina with a sponge dipped in vinegar so as to fill it completely; enjoined quiet and cool air. Eleven P. M.: Some considerable oozing has escaped through the sponge; the pains continue; left the sponge *in situ*, as the patient did not seem much exhausted.

“June 2nd.—Seven A. M.: Some oozing still going on; removed plug for examination; os uteri now size of a crown-piece, and lips thinner, but still rigid; the placenta is felt detached from posterior lip and back of cervix; anteriorly, the

membranes are felt, and the presenting part of child recognised to be the feet. The mother thinks the child dead, not having felt it for two days. The stethoscope, however, revealed the sounds of the fetal heart At noon I removed the plug; *there has been no further flooding*; os uteri the size of the rim of a wineglass; pulse 80, firm; some restlessness; occasional sensation of faintness and sickness. Still no urgency Half-past one P. M.: Os uteri more dilated; ruptured the membranes during a feeble contraction of the uterus, just anteriorly to the border of the placenta, and seized the feet, which readily descended; cord was still pulsating; and as owing to the smallness of the child there was no great pressure upon it, I saw no occasion to hurry the birth. Delivery was effected at forty-five minutes past one. (The child lived for two hours only.) After severing the cord, stimulated the uterus by friction to throw off the placenta. On examining this organ, found the cord inserted close to the margin, which had been adherent to the posterior lip and cervix. The part of the placenta which had been so situated and detached during labour, was indicated by its more rugged aspect over a space three inches in diameter, the presence of clots filling up orifices of cells, and infiltration of tissue with blood, simulating ecchymosis. The general structure of the placenta was healthy. Some clots followed removal of placenta.”

The following commentary was appended to this case:—

“But there arrives a period in partial placental presentation when the hæmorrhage ceases altogether, although a great portion of the placenta may still remain attached to the uterus. On referring to Case 2 (Case 5 of the present Lectures), where the placenta was implanted over the posterior part of the cervix only, it will be remarked that the hæmorrhage, which had been profuse, ceased when the os uteri was dilated to the size of the rim of a wine-glass. Why was this? The detached portion of the placenta had become plugged up by coagula, and *the remainder of the placenta, being attached to the body of the uterus, was not liable to become separated during the contractions of that organ.* It was, in fact, reduced to the normal condition, in which the placenta is attached wholly to the fundus uteri. In this condition, no part of the placenta being opposed to a portion of the uterus which is exposed to a greater degree of contraction than the remainder, it is not subject to partial detachment, and consequently to hæmorrhage.

“The facts establish a most valuable indication in practice. They serve to show that Nature, if closely watched, may at least in partial presentation be trusted to more than is generally admitted. They serve to show that turning and Dr. Simpson's plan of artificially detaching the placenta (which, it must be admitted, is in itself a severe and even dangerous operation) may be sometimes dispensed with altogether, and in most cases be deferred. They justify a stronger reliance upon the use of the tampon or plug, which is an

* On Flooding before Delivery, arising from adhesions of the Placenta to the Os and Cervix Uteri. By Robert Barnes, M.B. Lond., &c. THE LANCET, 1847.

easy and a harmless operation. Supposing you are called to a case of flooding from partial placental presentation, where, although the hæmorrhage has been abundant, still the patient's strength is good, the os uteri is scarcely at all dilated, it is rigid. In such a case, in order to effect either turning or total separation of the placenta, the hand must be forced through the os uteri at the risk of laceration and the other dangers attending those formidable operations; but if by plugging the vagina you promote the blocking up of the bleeding orifices by favouring the coagulation of the blood, you may safely reach the period when the os uteri shall be fully dilated, and when that portion of the placenta which had been adherent to the cervix has been wholly detached, and further hæmorrhage precluded by the sealing up of the detached placental surface. The remainder of the placenta, though still adherent, as it expands and contracts with the expansion and contraction of the uterus, will not bleed. If by following this practice you can safely bring your patient to the termination of the first stage of labour—viz., the complete dilatation of the os uteri—THE CASE IS RESOLVED INTO ONE OF NATURAL LABOUR, and unless any other complications arise, may be treated in the usual manner. The case No. 2 affords a complete illustration of these remarks."

I particularly insist upon the fact, that in this case the hæmorrhage could not be arrested by pressure from within. The flooding stopped whilst the membranes were entire; moreover, the feet—a part incapable of exerting the requisite pressure—presented.

And this case is not an exceptional one, but typical. In my lectures, I have constantly explained and illustrated this principle, and inculcated it as a rule of practice, to gain time, to temporize, as far as the condition of the patient will safely admit, so as to carry her on to that period when the flooding will cease spontaneously by the conversion of the labour into a natural one *quoad placental attachment*. I might cite cases without number in support of this proposition. Some will be found in the Appendix.

In a lecture, delivered in 1848, and published in 1849, having for its theme, "The Importance of a Rational Faith in Physiology as a Guide to the Safe Conduct of Labour," I further said: "*It is not, then, the separation of the placenta which secures immunity from flooding, but the contraction of the womb.*"*

There is, then, an anatomical, a physiological limit to the extent of placenta liable to detachment during the expansion of the womb. This is why, after a certain stage of the labour, no fresh bleeding surface is exposed. But how is the bleeding stopped from that part of the uterus already bared of placenta? By precisely the same mechanism as that which stops the flooding after normal de-

tachment of the placenta from its normal seat at the fundus. The longitudinal muscular fibres of the lower segment *must contract* to pull open the mouth. Expansion, dilatation of the mouth, is contraction of the cervix. This contraction, by shortening the cervical portion of the womb, casts off the placenta, and exposes the ruptured mouths of the utero-placental vessels. The *first* effect is, bleeding. The *second* is, to stop the bleeding. The contraction goes on either actively, or passively and tonically, in most cases; and this further contraction constricts the orifices of the vessels—closes them: it is hæmostatic. If hæmorrhage be renewed, it does not proceed, except under circumstances of excessive muscular relaxation—the "passive hæmorrhage" of Dr. Chowne—from the surface bared by the preceding active contraction: it proceeds from a fresh zone or arc further from the os, bared of placenta by another contraction. This zone or arc is, in its turn, in like manner sealed; and there is another pause in the flooding. Zone after zone is thus bared by recurring contractions, and successively sealed up until that physiological limit, that line of demarcation between normal and abnormal placental implantation, the boundary-line of placental detachment, which I claim to have discovered, has been reached. *This zone attained, the labour is a NATURAL LABOUR!* (See Fig. 2.)

Let any one whose mind is informed with this physiological truth, read the annals of clinical midwifery. He will meet with case after case in which he will perceive that interference, ruled to be imperatively required, in order to stop a presumed "unavoidable" hæmorrhage, has brought danger where safety had been reached.

Let me refer you back to the first case I have quoted from Zeitfuchs. Where was the necessity for interfering here?

How many times has the hand been forced through the rigid os, and the child dragged away, when all hæmorrhage had stopped? How often has Nature protested in vain against perilous help?

I must not be misunderstood. I am far from asserting that Nature never needs help in these terrible cases. But I assert that she is often ignorantly encumbered with help when she needs it not.

In support of the opinion that it is uterine contraction which is the true hæmostatic agent, I am happy to quote the authority of Dr. Tyler Smith, who says ("On Parturition and Obstetrics," 1849, p. 378), "There is, then, every reason for believing that the mode in which hæmorrhage is arrested, in all placental presentations, whether at the os or fundus, is the same—namely, the contraction of the uterine tissue at the seat of separation."

The present Dr. Legroux also, in the paper from which I have already quoted, distinctly enunciates the same doctrine. He says: "The hæmorrhagic act is diastolic; the apparent hæmorrhage is systolic; the hæmostatic act is systolic." He draws a remarkable therapeutical conclusion from this observation. During the diastole, that

* Introductory Lecture to a Course on Obstetrics, delivered at the Hunterian School of Medicine, by Robert Barnes, M.D., Lond. —*Medical Gazette*, 1848.

is, the interval of uterine relaxation, he advises to maintain the pressure of the mass of waters and membranes and child upon the neck. This is to be done by putting the patient in the vertical position. He says this plan perfectly succeeded in a very bad case.

Dr. Cohen, of Hamburg, also, in an article, based to a great extent upon the physiological views enunciated by me, shows that the hæmorrhage ceases when the placenta centralis is reduced to the placenta lateralis.

(To be concluded)

Original Papers.

THE ELECTRIC CAUTERY AND ITS APPLICATION TO DENTAL SURGERY.

By THOMAS H. HARDING, Esq.

(Continued from Sept. No., p. 208.)

Of the Operation in general.—The affected tooth being carefully examined, its cavity is to be well-dried out and cleaned; a soft napkin is then introduced, to protect the mouth from the possibility of contact with the instrument, the platinum point of which is passed into the cavity of the tooth, is then heated, and, from its brilliancy, gives a clear and distinct light, and the tooth-pulp is lightly touched with the heated wire, and the whole or particular portion of it required is destroyed. If the operator prefer it, he may have the wire heated before introduction into the mouth, but my own practice is generally to apply the wire before doing this, and then permitting of incandescence to take place in the mouth, which gives a light which is not seen by the patient, and so well illuminates the interior of the tooth, as to permit the tooth-pulp or diseased membrane to be seen very distinctly and clearly.

There is some caution to be observed in the use of this agent, which it will be as well to mention, and that is, to avoid burning or otherwise injuring the solid part of the tooth; particular attention and care should be paid to this point. This will not happen unless the application is prolonged, which will very rarely indeed be required, if special care be observed to have the wire at a white heat. This is the more necessary, to produce speedy destruction of the part to be touched, which is effected almost instantly. In one instance under my care, that of a lady for whom I nipped off the crown of an incisor tooth, for the purpose of fixing some artificial teeth, and so exposed the pulp of that tooth, I applied the electric cautery at barely a red heat, owing to feebleness of the acid; the consequence of this was, that the dental pulp became attached to the end of the wire, and was actually drawn out entirely. This has been preserved. It gave some slight pain for the moment, but nothing in comparison to the pointed steel or silver wire used by most dentists. This perhaps unimportant accident, I think, would not have occurred had the cautery been at a white

heat, as it would then have completely carbonized or destroyed the part with which it came into contact.

The effect of the operation is the rapid destruction of the pulp of the decayed and condemned tooth; not the whole of the pulp, for that is not always necessary, but that portion of it especially which is exposed. If this is done with a light, steady hand, no subsequent inflammation is produced upon the substance of the tooth, or in the cavity. If there should be any marked sensitiveness in the tooth, independent of the pulp, the slightest application of the cautery to it will prove effectual in completely removing it. In the large number of cases in which I have employed the electric cautery I have never known any bad effects produced on the tooth, and this I attribute to the care with which it has been applied. I am, however, quite prepared to believe that a want of attention in this respect would not only prove injurious to the tooth, but even in many instances cause its destruction. It would be only under such circumstances that the operation could be attended with or followed by severe pain.

In whatever condition the tooth-pulp may be, the operation is associated with a little pain. But as the time of its application is not unfrequently just a second or so, in the large majority of instances in which I have employed it, there has been no pain whatever felt. There may be a sort of a twinge, which is but momentary; and whatever pain may arise is not to be compared to that arising from the process of extracting a tooth, which, as is well known, is by no means free from a very considerable amount of pain. Some of my patients have felt so little when it has been applied, that they have asked me to apply it a second time to make all certain that the dental pulp has been effectually destroyed.

The subsequent filling of the tooth is a matter which demands attention after the pulp is destroyed. If the cavity is examined very minutely, a small black speck or spot can be seen after the cautery has been used; this is due to the carbonization of the pulp, and is a guide to some extent in the after process of removal of the carious portion of the tooth, which should always be done after the sensibility has been destroyed by the electric cautery, and is to be accomplished with care in the usual manner, taking the precaution to leave none of the tooth in that condition remaining; every particle of it should be removed. For a few days afterwards, sometimes only one, but generally two, the cavity is allowed to remain filled, with a combination of morphine and mastich, and then the tooth is stopped. Sometimes, again, I request my patients to allow a few days to elapse before I stop their teeth, the cavities being in the meantime filled with a solution of mastich and camphor. But I occasionally accomplish what I believe no other dentist has done, and that is, to plug, or stop the cavity in the same sitting during which the pulp has been destroyed. This, however, depends upon the complete absence of pain after the use of the cautery. I have

already stated that there is always a little pain, but sometimes this at once disappears, and I then do not hesitate to stop the teeth permanently. I also do this if there has been a little bleeding from the cavity previous to cauterization, stopping the tooth immediately. It might be supposed this procedure of stopping the teeth immediately after the destruction of the pulp would be always followed by dull, aching pain; but I am happy to say that not the slightest indication of pain has, in the great majority of instances, ensued, in rather an extensive use of this powerful agent.

As a rule, however, the tooth should not be stopped on the same day as the electric cautery has been employed, unless in the exceptional instances just mentioned—the removal of the carious portion not being followed by sensibility. Experience and practice teach us to know the proper cases which can be plugged immediately.

By waiting a day or two, I have found by experience also, that any sensibility remaining after the destruction of the dental pulp, and removal of the carious parts of the affected tooth, is sure to disappear, assisted by the solution of morphine and mastich, or mastich and camphor, which occupies the cavity. By this time the cavity will bear the pressure of an instrument within it, and an examination will show that the destroyed pulp has receded considerably inwards; this is apparent by noticing the black discolouration from the previous carbonization of the affected part, and as it is deeply situated, it is either out of the way of being pressed upon by the stopping of the tooth, or becomes a matter of the smallest possible importance, so far as my experience permits me to judge in this respect. I must, however, warn others not to mistake the black speck here referred to for actual caries.

Under the various circumstances which have been mentioned, the *results* of the operation are completely successful, and the teeth are serviceable for years. If, however, a tooth should remain tender after the use of the cautery, it is always better to wait for its complete disappearance before proceeding to stopping. I cannot call to mind any single instance in which the pain was at all persistent after its use, but it will be sure to become so, if the tooth is one not fairly suitable for preservation, from being either loose or diseased at the termination of a fang, such as a small fungous growth, or some similar cause. In such cases, as I will shortly show, the destruction of the tooth-pulp, accomplished no matter by what method, will prove unavailing and unsatisfactory, ultimate extraction in such instances proving the only resource. Should there be associated inflammation of the gums with a carious tooth, in which the pulp has been destroyed in the manner which has been recommended, then the usual means for combatting it must be resorted to, such as a leech or two to the gum, and repeated fomentations with warm water alone, as I am in the habit of recommending, or with warm milk-and-water, or a poultice. For the pain in the tooth itself, morphine and mastich will be found quite sufficient.

Some patients express the receipt of immediate relief after the use of the cautery, others, again, not for an hour or two, but eventually they are quite relieved; the pain, however, is, I repeat, extremely slight.

In the large number of instances in which I have used the electric cautery to destroy the sensitive tooth-pulp, I have not known an *accident*, in the true sense of the word, to happen, unless I should except the case in which the dental pulp was suddenly drawn out attached to the platinum wire, which I have preserved for illustration, and depending upon, as has been said, the wire being at a red instead of a white heat. Such a circumstance might occur again in the hands of others. To avoid injury or accidents, to the teeth or gums, it is necessary to keep the hand quiet, firm, and steady; the heated wires, if suddenly dislodged, would assuredly burn the cheek or gums, the tongue or palate, especially if steadiness was not particularly observed on the part of the patient. It was, I may say, only the other day, that an accident of this kind happened to a lady, in whose tooth I was applying the cautery; she suddenly turned her head, from some cause, when the heated wire touched the internal surface of the cheek. It may be observed, however, that so rapidly can the disconnexion of the wires be accomplished by removal of the finger from the handle of the instrument which is held in the hand, that an accident can really very seldom occur from the heated wire.

Having thus considered the history of the use of the electric cautery in general surgery, its application to dentistry, the nature of the apparatus employed, and the general features of the operation, together with its effects and results, I shall in the next place make a few observations upon the cases which are suitable, and upon those which are unfitted for its use; and will then draw a comparison between the use of the cautery and other methods of destroying the pulp.

Of the operation in particular.—The great object of this operation, which I am endeavouring so strongly to recommend in the present communication, is to destroy the irritable ulcer in the membrane of the tooth which permits the nerve to be exposed, and which is often associated with the presence and even protrusion of minute granulations, not dissimilar to what the surgeon meets with as protruding from an ulcer situated over a carious or necrosed bone in some other part of the body. This condition is accompanied with a certain amount of inflammation and tumefaction. The cautery, as I have said before, completely destroys the affected parts, and there is no time left to produce a new surface; nor do I think that could be accomplished after the destruction of the pulp; nor, again, is it a necessary measure, as no particular good could be derived from it, were it to be permitted to occur. The cavity is at once plugged and the admission of air to the tooth

prevented, and the sensitiveness and carious condition are permanently removed.

Now, of the *proper cases* in which the electric cautery may be used, the most important and common is that known as severe ordinary toothache, especially that form of tooth affection arising from a cavity with exposure of the tooth-pulp. In cases also of cavities requiring filling, in which too great a sensitiveness is present, thus preventing the satisfactory removal of the carious portions of the tooth, it is equally valuable. It is useful also in cases where the gums have receded, with exposure of a part of the neck of a tooth, which is extremely sensitive and oftentimes very painful to the touch; in these it is necessary merely to touch the exposed necks, to remove the sensitiveness. It is not less serviceable in its application to tender, sensitive, and bleeding gums, producing a new and healthy action, which permits them to become firmly attached again to the necks of the previously-exposed teeth. Sometimes it is merely necessary to hold the heated wire near a sensitive neck, without actual contact, to remove the tenderness. I have destroyed, with the greatest ease and rapidity, the pulps of incisor teeth, which have been cut off for the purpose of being pivoted. Every dentist is aware of the sensitiveness which sometimes exists in a pivoted incisor tooth, depending upon the vitality of the stump; this is completely obviated by the use of the cautery. I have employed it also in numberless instances in which unusual sensitiveness exists to both warm and cold substances, depending upon a variety of causes: such as exposure of the necks; or arising from chipping and fracture of the tooth from brittleness or some other cause; or, again, where the tooth has been filed, cut, or accidentally broken. A very striking instance of this kind—that is, unusually great suffering from taking either warm or cold liquids into the mouth came under my care but the other day, in which permanent and complete relief was afforded from the electric cautery. If a tooth is snapped off at the neck, and the pulp cavity becomes exposed and painful, it can be destroyed, and an artificial tooth may be fastened to the stump, in the same manner as when the tooth is intentionally removed for this purpose. Sometimes, also, bleeding will occur from the rupture of some minute capillary vessels during the removal of caries from a cavity which may have become morbidly vascular, without the presence of actual pain or even sensitiveness; it is equally serviceable here as in other forms of disease, and stops the hæmorrhage, which is inconvenient and troublesome, from its interference with the progress of stopping the tooth. I have also applied it in sensitiveness arising from the wearing away or grooving of a tooth, from the constant pressure of the spring clasp of a plate, which has caused the destruction of the dentine; mechanical friction, in fact, producing this condition.

As a general rule, the electric cautery may be used with decided advantage in almost every case of diseased tooth, with very few exceptions. But the commonest affection constantly requiring its

use, I again repeat, is ordinary *toothache*, not unfrequently most agonizing in its character, and depending upon the presence of a cavity from caries, which has laid bare the delicate nervous pulp contained in it, which, so long as it is likely to come into contact with the liquids and solids of the mouth, will continue in this condition. Destruction of the pulp and subsequent stopping prove the remedy; the nerve is destroyed, the pain disappears, and the tooth remains for years, and answers as well as if it had been filled without exposure and destruction of the pulp.

The electric cautery therefore saves many a tooth which, without its aid, would be otherwise totally lost. It is preserved for years, and perhaps it is not saying too much, that, if ordinary care and precaution are used, it will most probably last the lifetime of the individual. This, perhaps, may seem to be problematical, as many dentists would declare that, if the nerve is destroyed, the tooth is dead; it is a foreign body, and will last but a few years, ultimately decay, and require extraction. The cautery certainly destroys either a portion or the whole of the dental or nervous pulp; I will say, for argument's sake, that it does completely and effectually destroy the nerve of the tooth. The tooth, however, receives nourishment from the periosteum covering its fang, as well as from that lining its socket, and it would seem that there may even be minute nervous twigs accompanying the equally minute capillary bloodvessels which afford life and sustenance to the plugged tooth. It cannot therefore be looked upon as a foreign body, as it possesses and retains its vitality, which is derived through its fang, or, in other words, from without, and is thus capable, from the reasons mentioned, of lasting with proper care, the patient's lifetime. Mr. Naamyth has beautifully shown that a tooth is supplied with a large number of minute nervous twigs and bloodvessels.

I must also speak of another form of affection which has been relieved by it—namely, neuralgia of the face—a form of *tic douloureux*, supposed to depend upon some other cause than a carious tooth. On examining the mouth, however, I have detected an affected tooth, on destroying the pulp of which with the cautery, and subsequently stopping it, a permanent cure has been effected.

It may be recommended as admirably suited to destroy fungous growths springing from the internal pulp, which often bleed very profusely on the slightest touch.

It will thus be seen that the application of the electric cautery is wide and extensive, in the number and variety of the cases of tooth disease.

The following, however, are *unfit for it*, as it would not only produce no good, but harm might result from its use:—

When a tooth is loose, with its external aspect sound, but the pain depending upon the presence of a fungous growth or small abscess developed at the end of one or more of the fangs. In such a case extraction only will afford relief.

It will prove of no avail, in an attack of inflam-

mation of the central pulp, which may sometimes affect a tooth that is otherwise apparently sound. This may be known by the severe, heavy, throbbing pain which it occasions, running up to the head, accompanied with considerable tenderness of the tooth and the gum around it. This condition may go on to suppuration of the pulp, or to abscess of the alveolus, and consequent death of the tooth. Leeches are here useful, conjoined with some slight constitutional treatment.

And, lastly, when we find a black, unsightly tooth lying loose in its socket, with pain depending upon the irritation produced by its presence, the cautery will be ineffectual, as the tooth is in a true state of necrosis, is quite dead, and has truly become a foreign body; it must therefore be removed. This condition I have not unfrequently seen to depend upon the use or abuse of mercury.

If a comparison be now instituted between the electric cautery, as I am in the habit of employing it for destroying the tooth-pulp, and the numerous other means recommended to effect the same purpose, it will be seen that the balance of my confirmed judgment is entirely in favour of the former. Thus the great advantage of the cautery is, that the desired effect is produced in less time than a minute; whilst it takes days, and even months, to accomplish destruction of the pulp by the various substances habitually in use: amongst these may be mentioned arsenic, used either alone or in combination with other substances, as, for instance, a mixture of equal parts of arsenic, morphine, and creosote; chloride of zinc, in the solid form, or a combination of it and chloroform; cobalt, chloroform, creosote, gun-cotton, tannin, and tannate of lead. Nitrate of silver is used; or nitric acid on a gold wire. Many other substances are employed. The nausea produced by the use of chloride of zinc, or nitrate of silver, is particularly disagreeable. I have, however, the strongest objection to the use of arsenic, more so than to any other substance; and it is not without much thought on the subject, that I have come to the conclusion that it ought not to be employed in dental surgery. I have known instances in which this agent has been used, and the most acute and severe pain—in fact, absolute torture—has followed for several days, before stopping the cavity could be accomplished. Besides the pain, there is also the danger arising from its absorption. A few months ago a case of fatal poisoning appeared in the journals, which depended upon its absorption after employment in a dental operation. Added to the time required to destroy a tooth-pulp by these various substances, there is also the mischief caused by their local application to the teeth themselves, which should not be lost sight of in the consideration of this question.

Conclusions.—I have now been in the habit of employing the electric cautery for upwards of six years, and during that time have used it in more than five thousand instances, with an amount of success that has surpassed my most sanguine expectations, and without the occurrence of a single accident worthy of mention. I may truly say,

that there are very few cases of toothache which cannot be relieved by it, when the membrane or tooth-pulp can be got at to destroy it. These very few cases are the exceptional instances which have already been referred to. It has been held by writers on diseases of the teeth, that the impossibility of instantaneously effecting the absolute destruction of the tooth-pulp in such teeth as are situated at the back of the mouth, which possess several diverging roots, is a sufficient ground for rejecting the means which were employed for that purpose—namely, the heating of a wire, in the form of the actual cautery, which cannot at any time be maintained at a white heat. It was in consequence of this very great difficulty that the actual cautery has fallen into disuse. Now the advantage which the electric cautery has over every other conceivable method is, that the white heat produced, and which cannot be obtained in any other manner, effects the purpose desired suddenly and with completeness. Besides this, it can be applied with perfect ease and freedom to teeth situated in any part of the mouth without the risk or danger of burning it—a risk almost impossible to avoid, with the greatest care, when the actual cautery or heated iron was employed.

It might be supposed again, that some imaginary terror is likely to be excited in the patient's mind, at the idea of the electric cautery, in the shape of an incandescent body being used for any purpose in the mouth. I can truly say, that in the large amount of experience of its use which has fallen to my lot, that there is not the slightest ground for such a supposition. If this be an objection to its employment, then it falls to the ground, for I can call to mind no instance where this fear was manifested. Sometimes, as has been before mentioned, the wire is introduced already heated into the mouth, when being applied to the tooth.

At one time much dread of the actual cautery arose, from the burning of the mouth by the heated handle of the instrument, which was unavoidably employed to keep the wire hot, and this occasioned, we believe, its comparative rejection in this country. With the electric cautery such accidents are avoided; I may say they scarcely ever occur, in the hands of any ordinarily skilful man, for, owing to the extreme fineness of the wire employed, the local heat, though intense, is very limited in its action, and with due care the tooth substance need not suffer any appreciable injury. For the same reason, with the additional and more powerful one, of suddenly breaking the connexion between the poles of the battery, no injury can happen to the mouth or gums.

Such, then, are the uses and advantages of this valuable agent in dental practice, and so well known is it becoming to a large number of the public, that a considerable proportion of my patients come recommended to me by medical men and others, for the express purpose of cauterization by it.

In March a lady, to two of whose teeth I applied it instead of extracting them, writes to me, "Neither of my teeth have given me the least uneasiness. I am sure I have much to thank you

for. Now, one need not fear the approach of toothache; we are so much more favoured than those who lived a hundred years ago." These two teeth were, I may observe, cauterized and stopped at the same sitting.

I can now with still greater confidence, and much larger experience, lay this most valuable and efficient remedy before the notice of my professional brethren than I did in 1851. Very many years' constant trial have only further convinced me, that for ingenuity, simplicity of contrivance and application, nothing that has hitherto been invented can surpass it. And I again confidently leave it in their hands, gladly availing myself of my connexion with the College of Dentists, as one of its members, as a medium of doing so.

Park-square East, Regents Park, 1867.

ON THE THERAPEUTIC USE OF OXYGEN.

By S. B. BROWN, M.D.

IN venturing to call professional attention to the subject of this paper, I may safely premise with the remark, that it is one respecting which there exists great diversity of opinion and very little practical knowledge. The therapeutic use of oxygen gas, either alone or as an adjunct, in various intractable diseases, is a subject of vast importance to my professional brethren, enhanced in value as it is by an impartial reflection upon the still very uncertain and unsatisfactory state of our knowledge of medicinal *modus operandi*. Thus far, excepting to a few individuals, and to a very limited extent, this gas, although so well known in its physiological relations, has been practically little better than a "secret" in its therapeutic bearings. Notwithstanding that from the time of Dr. Beddoes and Sir Humphry Davy several practitioners have made successful trial of oxygen in private practice—notwithstanding that the researches of modern chemistry have made us more scientifically cognizant than formerly of the relations of oxygen to the other elements of the vital organism, and the transformations which determine the pathological conditions of that organism—notwithstanding that the daily observation of every man who has disease to treat shows him that the patient needs plenty of pure air, more air (in other words more oxygen) than he can possibly obtain under many circumstances and in many diseased states from the atmosphere around him—the idea seems merely to float through the professional mind, without any resulting general endeavour to make a practical application of it.

It would not be difficult to show cause why the use of this remedy has been neglected. It involves some trouble and loss of time to the practitioner, and consequently the very want of practical knowledge still existing may be justly attributed to the neglect to carry out fair trials on a sufficient scale in practice. Thus the profession has been led to overlook or ignore oxygen as a medicine, even though chemical science tells us decidedly that it ought to be a most valuable remedial agent. A single trial,

or several trials on several patients, are no evidence, if they fail, against its value; they are only proof either that it was not suited to the case, or that it was not properly exhibited. Drs. Beddoes, Thornton, Hill, and others, who have tested this gas in a sufficiently large number of cases, afford conclusive evidence that it is a powerful therapeutic; while occasional experiments, in which it has been unsuccessfully tried, can only be accepted as proof that, were we to seek an "universal panacea," oxygen is not that remedy. True, medical science will learn to value it at its intrinsic worth only when it is allowed to have a fair and sufficiently extensive trial.

That oxygen may be exhibited with the success which it merits, much valuable time must necessarily be devoted by the physician; in consequence few practitioners have hitherto had the patience to use it even in a limited number of cases. And here I may venture the truism, that *confidence* in any medicine can be acquired by men of judgment only through the medium of ample experience. The limited amount of practical acquaintance with oxygen, as a therapeutic, at present in the profession, has been forced on my mind by the variety of opposite opinions that have been expressed. Some of my brethren express their firm belief that it "must be an injurious excitant or stimulant;" others, taking a precisely contrary view, somewhat contemptuously observe, "It is, I suppose, just like taking a little more fresh air, it can do neither much good nor much harm;" others, again, join issue with me on the presumed "too rapidly destructive metamorphosis of tissue" in attenuated subjects. Very many have serious misgiving as to the gas setting up pulmonary inflammation; while one eminent physician told a patient of mine that the Almighty had given us a certain percentage of oxygen regularly to breathe—*ergo*, there could be no necessity, under any circumstances, to increase that quantity. Other opinions I could name, but the above will suffice. As a rule, I may say, that *οι άπιστοι* ignore oxygen as a worthless remedy, founding their opinions upon former failures; *οι πολλοί* with few exceptions, have never heard of its having been tried and found wanting, but entertain a general belief, when induced to reflect on the subject, that it ought to possess valuable, but, to their minds, undefined curative properties. Even Dr. Pereira himself, in the last edition of his "Materia Medica," concluded his remarks upon the therapeutic action of oxygen in these words: "On the whole, then, I believe oxygen to be almost useless as a remedy." Thus prestige and authority are decidedly hostile to this powerful remedial agent.

In this paper it is not my intention to enter into details respecting the chemical actions of oxygen upon the organism, and its highly-important relation to the vital dynamics. I hope shortly, however, to throw out a few suggestions for the consideration of my superiors in the *scientific* world.

Meanwhile I will content myself with assert-

ing, as the result of considerable experience and close clinical observation, that an increased supply of oxygen to the system may become, under different circumstances, exciting, depressing, sedative, tonic. Each patient must be treated according to peculiar characteristics of temperament, diseased conditions, long or short continuance of disease, existing and changing symptoms; and the effects of the treatment must be carefully watched. No practitioner must expect full success at first, if he be induced to make a trial of oxygen in difficult and intractable cases. As obtained formerly with myself, he may for some time meet with much disappointment; and he may probably discover the necessity of extended clinical experience with the gas, before he will feel himself able to administer it with justice to the patient, to himself, and to the remedy. Everything depends upon minute details; while not unfrequently much judgment and practical knowledge of this therapeutic are requisite for the due selection of medicinal and dietetic adjuncts.

Having for some time extensively employed oxygen in my own practice, and now feeling myself in a position to adduce some practical evidence not without value, I hope to offer occasional clinical facts and remarks, which may prove of some little service in the highly-important, but imperfectly-explored, prairie of therapeutics. Subjoined are two cases:—

S. B—, Esq., aged thirty-three, unmarried, of temperate habits, of nervo-sanguineous temperament, with some hereditary strumous tendency, had been the subject of secondary syphilis for seven years, and had undergone a variety of fruitless treatment. Amongst other measures, he had, under the best advice, been subjected to several courses of mercury, iodide of potassium, sarsaparilla, nitric acid, cinchona, and all the most approved means usually employed in treating such cases. Finding himself rather worse than better, and coming to the sad conclusion that his constitution had become terribly shattered, quite as much from the mercurial treatment as from the original disease, he resolved, by the advice of a friend, to place himself at a hydropathic establishment. Here he underwent such severe treatment that he was compelled after some weeks to give it up, owing to increased general weakness and exhaustion of his vital powers, with tendency to ulceration of the legs. He now consulted several eminent practitioners; went through a repetition of iodide of potassium, cinchona, &c., and was recommended the most generous diet possible, with wine and porter. This failing, he was advised, as the *only hope* of cure, to take a long sea-voyage to a warmer climate. He had made up his mind to follow this advice as a *dernier ressort*, when one of his legs became suddenly so seriously ulcerated and his whole system so debilitated, that he determined to place himself under my care, in consequence of hearing of the extraordinary agency of oxygen in cases of ulcerated legs and general debility. Such was his history.

June 29th, 1856.—This unfortunate gentleman consulted me. I found him extremely weak and anæmic, his powerful and muscular frame completely relaxed and attenuated; the skin throughout the body was quite blanched, and so transparent as to show deeply beneath the surface *general* dirty-looking congestion, with occasional spots of complete purpura. Some caries of one superior maxillary bone was observed, extending from the alveolar processes of the molar teeth. He suffered much from cerebral irritation, the eyes being suffused, intolerant of light and almost useless, with chronic iritis, and some effusion of lymph of low organization. Pulse from 100 to 112, very small, almost imperceptible; tongue white and relaxed; and although the weather was tolerably warm, his vital powers were so low as to render it almost impossible to generate sufficient animal heat to keep him alive, the extremities being cold and clammy. In fact, universal prostration and torpidity of function prevailed; and I ought to add, that he had a suspicious, short, hacking cough (which had existed some months), with profuse nocturnal perspirations, but no well-marked physical signs of tubercular deposit. Upon examination of his legs, a very large ulcer was seen on one calf, and a little ulcerated point, communicating with a small but deep cavity on the other. The larger one, he informed me, had commenced in a little spot about a fortnight previously, and had for some days been spreading very rapidly, causing much severe pain and constitutional irritation. It now presents the peculiar appearance of a sloughing mercurio-syphilitic ulcer, exactly circular, about two inches in depth, considerably excavated; the whole circumference, for the distance of an inch and a half or two inches from the edges, is hard, red, and extremely sensitive; there is a discharge of dirty-looking sloughy matter and acrid sanious fluid. In spite of the vigorous and judicious measures advised by an eminent London surgeon, who had been consulted a few days previously, the sloughing ulceration is rapidly extending; and in the excessive prostrated condition of the sufferer the case appears by no means hopeful.

Here an opportunity offered of severely testing the power of oxygen; and knowing what this therapeutic agent could effect in analogous non-syphilitic ulcers, and in most cases of extreme debility and languid circulation, I at once determined energetically to bring it into action. My patient was ordered to preserve the horizontal position, and to foment, poultice, &c. The same afternoon I administered a large dose of the gas, which had the effect of making him feel more comfortable. The following morning, the ulcer still alarmingly progressing, I carefully superintended the administration of the largest quantity that could be borne, and ordered a moderate inhalation in the evening. From that time it spread no further, and by daily watching my patient during the succeeding fortnight I had the satisfaction to witness the separation of the dead portions, the perfect cleansing of the whole sur-

face (the muscle being left exposed for some distance, and its movements being seen at the bottom of the cavity), and the gradual filling up of the depth with granulations; while at the same time the appetite returned, and the capillary circulation, with the entire nervous system, began to regain tone. Small doses of iodide of potassium were now ordered three times a day, and nutritious but moderate diet with porter; cod-liver oil was rubbed into the chest twice a day, and tepid daily sponging of the whole body was enjoined. In five weeks he was able to walk about, and in seven weeks entire healing of the large and deep excavation resulting from the ulceration had taken place, permitting him with his increase in strength to walk without difficulty many miles. He now left town, taking with him a supply of condensed oxygen, with a strict direction to continue his moderate inhalations, the iodide of potassium and the cod-liver oil externally, and to communicate with me by letter once a week. Three weeks afterwards, having walked rather too much, and having otherwise irritated and injured the place on the other leg, where the small point of ulceration had apparently healed under the influence of the oxygen *without sloughing*, he thought it advisable to return to London. I found an ulcer of moderate size, much inflamed from irritation, rubbing of his trousers against it, and neglect; moreover, he had caught a severe cold, and his cough (which had never left him), with profuse perspirations at night, caused much disturbance. He was feeble and *extremely* sensitive to cold, although the weather was warm. I gave him stringent directions as to quiet for his leg, largely increased his quantity of oxygen at each inhalation night and morning, continued his other constitutional treatment as above mentioned for the specific diseases, and watched him closely by means of two long daily visits. He again progressed most satisfactorily, and was soon enjoying his favourite pedestrian exercise.

Steadily continuing his treatment, he towards the middle of September had entirely lost his consumptive cough and nocturnal perspirations, had fully regained his nervous tone, and had recovered his flesh; he suffered no longer from cold and languid circulation; the dirty congested appearance beneath the cuticle had quite disappeared; the jaw (from which there had been some exfoliation) seemed quite sound, and the general cerebral irritation with *iritis* had for some weeks ceased to evidence itself, the effused lymph likewise having undergone complete absorption, and the membranes and chambers of the eye being quite clear and free in their movements.

About the end of October, this gentleman, an ardent disciple of Nimrod—wrote for permission to follow the hounds again. With a caution, I acceded to his request; and I have since learnt that he rode very hard during the hunting season without any return whatever of his former protracted disease. A few days ago, I may add, I heard some further account of him, and he is now stouter and stronger, and altogether in more robust health, than (he thinks) he ever recollects.

It is especially worthy of remark, with this interesting case in retrospect, that there exists probably no remedy at all comparable with oxygen as (in common parlance) a "purifier of the blood," when judiciously administered. My own experience particularly points to its well-marked and energetic action upon the general capillary circulation and upon the skin; in most cases it powerfully promotes the healthy secretions of the latter, and enables it to throw off an immense amount of morbid and poisonous matters; and, unlike all other medicines, while performing this duty, it produces no weakening or other untoward effects, but, on the contrary, simultaneously acts as a general tonic to the entire constitution. It will be observed that I ordered, as an *essential* adjunct to treatment, tepid sponging of the whole body daily, the poisonous *débris* cast off with the aid of the gas, and accumulating on the skin, obviously necessitating either such sponging or the use of the tepid bath. It also merits a passing notice how quickly the heroic doses of the gas, temporarily and carefully given, demonstrated the power of this therapeutic in cutting short and arresting the progress of rapidly-spreading ulceration.

I will give a second case very briefly, from memory, so as not to lengthen my present paper too much.

A. B—, a policeman, aged thirty-six, had been nearly three months under skilful medical treatment on account of inveterate boils and carbuncles, which, appearing in continuously successive crops, resisted every remedy. At length he was advised that medicine could do no more for him, and that he must get immediately into the country, for the purpose of trying what that change could effect. He was at this time covered with from twenty to thirty specimens of this very painful eruptive disease, and his health was necessarily much undermined from acute suffering and constitutional irritation. Being accidentally met with, he was offered gratuitous treatment under oxygen. Having a family to provide for, he could ill afford to leave them, and therefore thankfully accepted the proffer. He at once commenced a daily inhalation, and so rapid was his progress that in from ten days to a fortnight all the eruptions had entirely disappeared, and the unhealthy constitutional condition was so completely overcome as to render the cure permanent.

Regent-street, July, 1857.

NEW TREATMENT OF CHOLERA: ITS ORIGIN AND CURE.

By A. C. BOATE, Esq., L.R.C.S.I.

LATE ONE OF THE SURGEONS TO HER MAJESTY'S 6TH DRAGOONS (INNISKILLINS).

WHAT is cholera?—or what is the nature of this terrible disease, so sudden in its attack, and in many instances equally so in its fatal termination?

In the autumn of 1853, at Newcastle-on-Tyne, where I was quartered with part of my regiment,

the cholera prevailed to a fearful extent, so much so that the deaths of the inhabitants in the town and adjoining the barracks were from 100 to 150 daily, and, although the numerical strength of the garrison was nearly 500 men, exclusive of women and children, not a *single death* occurred. The treatment adopted I will give in detail.

At Newcastle-on-Tyne in 1853, I gave this epidemic my most attentive consideration. Afterwards in Varna, in Turkey, in 1854 (where the troops were nearly decimated), at which period I became confirmed in an opinion—which before I had some doubts of, not having had sufficient experience—that cholera is originated in the brain and spine by some magnetic or electrical condition of the earth and atmosphere, withdrawing or suspending their influence over the various nerves of the body, but more particularly from the pneumogastric nerves, those nerves that preside over the stomach, lungs, and vocal organs, and which are essentially necessary to the functions of respiration and digestion. Take, for example, a dog or a rabbit, divide or paralyze by artificial means its pneumogastric nerves, and you produce the identical symptoms of cholera.

In the Appendix to the Report of the Committee for Scientific Inquiries in relation to the cholera epidemic, 1854, Table XXXVII., showing the electricity of the atmosphere at the several stations, is most interesting, and affords a great field for further study and observation. I maintain that it is the negative electricity that acts on the sympathetic brain and spine, and produces cholera. On turning to page 108 of the same Report, I find a passage which strongly bears me out—viz.: “I much regret that the electrometer observations began too late to afford any decided results. They would, however, seem to show that a deficiency of electricity prevailed during the time when the disease was at its height, and that at low stations, as compared with higher, a deficiency was likewise to be observed, which fully accounts for the prevalence of cholera in low districts.”

There are two forms of this direful malady: Cholera Mitior, analogous to English cholera; and Cholera Asphyxia, or suffocative cholera, the latter being the most dangerous. Complete paralysis or suspension of the brain's influence over the various nerves of the body, particularly of the pneumogastric nerves, exists in this special form of the disease. The lungs do not perform their proper functions; the vitality of the blood is not maintained; consequently the duration of the disease depends upon the complete or incomplete paralysis of these nerves.

While, in certain localities, the electrical condition of the earth and atmosphere is *predisposing* only, the immediately exciting causes are many and various, effluvia being amongst the most prominent; 2nd, excesses of any kind; 3rd, evaporation arising from damp floors, cesspools, &c.; 4th, purgatives taken for some other complaint. I cannot give a better example of immunity from the cholera epidemic than the Newcastle Garri-

son when I was in charge, and I attribute it solely to guarding the soldiers against the exciting causes, and, by a strict surveillance over their habits, doing away with effluvia; and cautioning them against the danger of not making immediate application on the appearance of diarrhoea.

The first symptoms are vomiting and purging—exactly what takes place when the brain is injured; but I have frequently noticed that patients generally complain of a tightness of the chest, sometimes amounting to pain, with a difficulty of respiration, and occasionally uneasy sensations in the head previous to these; after which come cramp, loss of voice, &c., &c.

Having briefly stated what the predisposing and exciting causes are, I beg to add a few observations, as well as my experience, relative to its *treatment*. What can this be, in a disease in which the door to medication is in most instances closed by the early paralysis of the gastric nerves? The physician must have recourse to a remedy possessing an instantaneous effect over the brain and nerves. Now, every one knows the effect of an emetic, acting directly on the brain, exciting a more vigorous action of the powers of the constitution, as is proved by the amendment of the pulse, and other favourable appearances, immediately after vomiting. Although produced by debility of the brain in the first instance, it has the effect of reflecting strength back on the constitution.

This is the groundwork of my treatment in every stage of cholera:—First begin with an emetic, followed (after the action of the emetic has ceased) by an opiate—say thirty to forty minims of tincture of opium, and thirty minims of sulphuric ether, to two ounces of water. If this does not rest on the stomach, a pill, composed of three grains of calomel and one grain of opium is to be given. This will often remain on the stomach when nothing else will. But what is to be done in collapse, when the pulse is small and thready, respiration almost suspended, and lividity pervading the whole system (the circulation being impeded owing to the contracted state of the lungs)? Chloroform is the grand remedy. But how does it act, or how should it be administered? It is given by inhalation, carefully marking or watching the effect upon the pulse. Now the first effect of chloroform is a strong stimulant, the pulse becoming full and bounding, where before its use it could hardly be felt. You must prolong its application as long as the pulse is full, and the moment it begins to sink, withdraw the chloroform; alternately repeating and withdrawing the stimulant until the patient lapses off to sleep. I may also add, that in a case of incessant vomiting, where nothing will remain on the stomach, a full opiate, say thirty or forty minims of tincture of opium in combination with half a drachm of ether, may be given in a little water, and then the chloroform administered, which instantly checks the vomiting; and this action being kept up, the opiate becomes absorbed, and sleep very soon follows.

This I maintain is a *new treatment*, and one which I invariably adopted during the cholera epidemic at Varna (where I was in charge of her Majesty's 6th Dragoons), and with such success, as the medical return will show (vide "Army Medical Board Returns"), that out of 62 cases of genuine Asiatic cholera, I only lost 9 patients (about 14 per cent). I will illustrate this treatment by giving a few cases:—

Private —, 6th Dragoons, was attacked in the night with severe diarrhoea, quickly followed by vomiting, great mental depression, &c. Did not make any application to medical officer until the next day. On the morning following his attack his comrades gave him brandy, pepper, &c. He allowed the disease to go on until the evening, when my hospital sergeant heard that he was ill, and reported the case to me. I visited the man's tent, which was a small one, pitched at the back of his master's ball-tent, only a few yards intervening. I found him in a state of extreme collapse, lividity pervading his whole system; incessant vomiting, with frequent diarrhoea, and pulse not to be felt. I ordered him to hospital instantly, administered a mustard emetic, which had the desired effect, and then applied the chloroform, having first given him a full opiate in conjunction with a stimulant. The pulse, which at first appeared small and thread-like, gradually became larger, stronger, and fuller. I kept up the action of the chloroform until the pulse began to diminish, and then withdrew it, again to repeat it after a short interval. The vomiting and diarrhoea ceased, and sleep followed. The patient remained asleep for about four hours, and awoke complaining of great thirst, which I have invariably remarked in all cases of cholera. I always kept a large quantity of solution of bicarbonate of soda with a little ginger, which I think makes the nearest approach to the saline ingredients of the blood, the ginger being merely to stimulate and warm the stomach and intestinal canal, &c. This I allowed the patient to partake of freely. He had slight consecutive fever, but was quite recovered and at his duty on the sixth day.

Sergeant —, 6th Dragoons; admitted into hospital, complaining of uneasy sensations in the head, slight pain, or tightness of the chest, as he termed it; vomited frequently during my examination of him; stated that he had suffered from diarrhoea the greater part of the night; great mental depression; pupils much dilated; pulse very small, and with difficulty could be felt; in fact, the usual symptoms that characterize this hitherto formidable disease. Ordered, a mustard emetic; as soon as the action of the emetic ceased, a full opiate, with ether, in a little water. Vomiting and diarrhoea ceased, and sleep followed. At his duty on the third day.

Sergeant Major —, 6th Dragoons (treated in his tent); was attacked with diarrhoea in the middle of the night, quickly followed by vomiting; stated he drank a good deal of native wine (sheerah) on the previous evening. This was a good example of excess as an exciting cause. His countenance

was shrunken and nearly livid; voice scarcely audible; pulse hardly to be felt. A mustard emetic was administered, which did not act for some time, but when it did, it was effectual, a large quantity of bilious secretion coming away. A full opiate, with sulphuric ether, was administered, and immediately followed by the inhalation of the chloroform, to prevent the rejection of the opiate and stimulant. The pulse rose full and bounding, lividity disappeared, and I had the gratification to find my patient in a slumber after a few minutes. Ultimately he did well, and was quite restored to health in a few days. I could add several other cases, more or less severe than these, but I think it would be superfluous.

I did not take any notes of the number of *diarrhoeal* cases, which were very frequent; as many as fifty or sixty patients (in my regiment) made application daily to hospital for medicine to check this disease. The most successful formula I found to stay it was a mixture composed of the following ingredients:—Prepared chalk, aromatic confection, tincture of catechu, tincture of kino, gum Arabic mucilage, tincture of opium, distilled water. Also a pill composed of three grains of calomel, one grain of opium, and one grain of aromatic confection.

These were the formulæ which I also used at Newcastle-on-Tyne in 1853, when there were nearly 500 cases of diarrhoea admitted into hospital, and not a single death. Compare this with the report of the London hospitals in 1854, and truth will speak for itself.

In Dr. Babington's Report on the Cholera amongst the Black Sea Fleet, furnished to the Board of Health, a great deal of ingenuity is shown, but, alas! after comparing the reports of almost all the medical officers of the Black Sea fleet, he concludes thus: "But no measure of success seems to have followed any mode of treatment, so as to recommend it emphatically beyond the rest." Some of the suggestions in Dr. Babington's compilation are, he states, very valuable, and it affords much food for reflection on a disease, the nature of which remains so obscure.

In putting these few notes together, I have carefully avoided enlarging this little treatise, or adding any superfluous matter, thereby making it easily comprehended. Already the symptoms are, I am confident, but too evident to those who ever once saw cholera: and besides, they are so elaborately described by so many authors. My object is merely to introduce a *new treatment* for this hitherto formidable disease, and which has been so far successful, that I deem it but right to make it known for humanity's sake.

I think a great deal of useful information may yet be derived from carefully-made observations with the electrometer at *night*, for invariably every case of cholera that I had to deal with in my extensive field of practice occurred between twelve and three o'clock at night. Not having an electrometer in my possession, either at Newcastle-on-Tyne or at Varna, in Turkey, I made no observations.

Composition of chloroform: $C_2 H Cl_3$. It is improperly called a *terchloride* of formyl, its real composition being as I have stated above. Its action is *stimulant, sedative, and anti-spasmodic*, the identical three objects essentially necessary to recover a cholera patient.

July, 1857.

A CASE OF HEMIPLEGIA; THE PARALYSIS ON THE SAME SIDE OF THE BODY AS THE PARALYZING LESION.

By PETER EADE, M.D., LOND.,

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J. G—, aged thirty-four, a well-formed and average-sized man, by trade a plasterer, became a patient at the Norwich Dispensary, in September, 1856, on account of a recent attack of head symptoms accompanied by hemiplegia. His history was this: For many years previously he had suffered from occasional attacks of what he called rheumatic gout, the last having occurred only a few weeks before the present seizure. Although not exactly intemperate, he had always been in the habit of drinking freely of beer. Ten or eleven years ago he had chancres on the penis. Two years after this he had a slight attack of paralysis of the left arm, from which he soon recovered. Three years later he suffered from ulcerations of the scalp; and after these had healed he remained in good health until about five weeks since, when he began to suffer from headache, chiefly frontal, with drowsiness and disturbance of the function of sight. This was followed by an attack of sickness and diarrhoea; and after recovery from this, he, four days ago, suddenly found himself unable to articulate and paralyzed in the left arm and leg. There was no hereditary predisposition to gout or apoplexy, and no known cause for the present attack.

Symptoms, when first seen by me on Sept. 8th, four days after seizure: Hanging of left cheek; indistinct articulation; inability to whistle or blow with his mouth; slight numbness of the paralyzed cheek; protrusion of tongue to the left side; paralysis of left arm and leg, complete as to motion, less absolute as to sensation; diminution of reflex action in paralyzed leg; pain of head, referred to the vertex, with much heat of scalp; dilatation of pupils, these being equal, contracting considerably when first exposed to strong light, but almost immediately returning to their former state; laboured and weak pulse, at 60; easy respiration; consciousness unaffected, and intellectual power very slightly impaired. No signs of lead-poisoning or of heart-disease.

In the interval between the commencement of his illness and his death—a period of nearly eight months—he suffered repeated exacerbations of the symptoms of congestion and pressure within the head. About a week after his seizure, he for a short time completely lost the sight of the left eye, the pupil becoming larger than its fellow, and the upper eyelid drooping. Soon after this,

the reflex actions in the paralyzed leg became completely abolished.

In October, he suffered from severe pain, without either swelling or redness, in the right knee, which lasted several weeks, and was quite uninfluenced by remedies.

In December, several spasmodic or convulsive seizures occurred, and in one of them he was found stretched across the bed almost in a state of *opisthotonos*. His mind had now become much enfeebled, and he had a distinct attack of gouty inflammation in the left elbow.

In January, 1857, he continued to become more and more childish. The sphincters were only imperfectly under control. He had a slight cough, and was observed to be losing flesh fast.

In February, the flexor muscles of the paralyzed arm had become very tense and rigid, so that attempts to straighten the limb caused very great pain. Voluntary power over the leg was much increased.

He died in April, sinking gradually from exhaustion, death being preceded by expiratory puffing of the cheeks, frequent convulsive tremors of the muscles of the neck and face, apathy, and imperfect coma.

Dissection, April 25th, 1857, twenty-four hours after death.—Head: The parietal and frontal bones marked on their outer surface by several pits or depressions, the largest as big as a shilling, evidently cicatrices of old ulcerations. At these places, the bone was found to be quite thin and translucent; and to the inner surface of one, situated in the centre of the left parietal bone, the dura mater was adherent by an old organized patch of lymph. The arachnoid milky nearly everywhere, and quite opaque where it covered the right hemisphere and the base of the brain. A large elongated patch of enormously-developed Pacchionian bodies on the internal edge of right hemisphere, to which the dura mater adhered intimately. At the base of the skull, in one small spot upon the posterior part of the right petrous bone, the dura mater was almost absorbed, leaving only the transparent arachnoid membrane. The anterior surface of both petrous portions of the temporal bones so much thinned by absorption as to leave the slightest possible covering of areolated bone to the internal ear. Pia mater vascular; the cerebral substance somewhat congested; no apparent disease of the arterial system. On opening the left lateral ventricle, the corpus striatum and adjacent part of hemisphere were seen to be more prominent than natural, and had a gelatinous appearance, as if both oedematous and softened. At the junction of the left corpus striatum with the hemisphere was found the remains of an old clot, the size of a horse-bean, the blood being semi-fluid, and like to inspissated bile. The cerebral substance around it was softened, but not discoloured; the substance of the corpus striatum itself was infiltrated with serum, and softened, and occupying its outer and anterior part was a firm greenish-yellow tumour of irregularly-elongated form,

about equal in bulk to a walnut, and surrounded by softened and discoloured brain. On the right side, situated in the hemisphere, just external to the corpus striatum and optic thalamus, was a small mass similar in appearance to that found on the other side, consisting of two small rounded nodules, the size of swan-shot, adhering together by a sort of pedicle, and surrounded by softened cerebral substance.—Chest: Old adhesions of pleuræ, chiefly on the left side. At apex of the left lung were some small tubercular masses, some of them in a state of incipient calcification.—Abdomen: Liver large, adherent by old false membranes to the peritoneum, its structure granular and almost nutmeggy; kidneys large and congested; a little purulent fluid in the pelvis of the left.

The cerebral tumours appeared to be composed of a low form of fibrinous exudation, and showed, as their microscopical elements, a granular blastema, containing a large quantity of free oily-looking dots and granules, and corpuscles of various sizes and shapes containing granular matter, and the same bright-looking dots, so many of which were seen floating free.

For the preceding case (a brief notice of which I a few weeks ago brought before the Norwich Pathological Society) I venture to ask a place in the pages of *THE LANCET*, believing it to be worthy of record as a genuine example of that very rare condition of disease, in which the paralyzing lesion exists on the same side of the body as the paralysis itself. So rare is it, that Dr. Watson ("Lectures on Physic," vol. i.) refers to only two such cases, Dr. Todd (article Paralysis in "Cyclopædia of Medicine") to only four, and Dr. Bennett (in "Library of Medicine") speaks of being acquainted with only twenty-one similar ones as having ever been published. Moreover, the tone of all the authors whom I have consulted on this subject is such as to imply a doubt of the authenticity or trustworthiness of the descriptions in these exceptional instances, or at least to cause it to be inferred that even in them the real paralyzing lesion existed (though perhaps overlooked or unappreciated) as usual in the opposite hemisphere.

It may, perhaps, be urged that as in this case of mine a distinct lesion was found after death in the right half of the brain, therefore there is no need to suppose any exceptional direct, instead of crossed, nervous influence. But it appears to me that, although such an explanation of the phenomena is *possibly* the true one, yet that the whole train of symptoms during life, as well as of the morbid appearances after death, are entirely opposed to such a supposition; for

1. The primary seizure was one of acute disease, apparently hæmorrhage, with either active congestion or inflammation, and probably of a gouty character.

2. The paralysis came on suddenly, and was doubtless due to the clot found on the outer side of the left corpus striatum. This clot was small (thus accounting for the slight affection of con-

sciousness), and had not the appearance of being a hæmorrhage resulting from softened brain substance; for although not distinctly encysted, the cerebral matter immediately around it was sufficiently dense, and it was only externally to this that it became very soft and diffuent.

3. The amount and degree of softening were infinitely greater on the left side than on the right.

4. The mass of tumour in the left hemisphere was as large as a good-sized walnut; that in the right scarcely bigger than a pea, and utterly insignificant in comparison with the other.

5. The paralysis of the eye and eyelid, a few days after that of the limbs, was on the left side.

6. There was no atheromatous disease of the cerebral arteries.

7. It is worthy of remark, that the former attack of paralysis of the arm was on the left side, and that the morbid appearance which best accounted for this—viz., an old organized patch of lymph on the inner surface of the centre of the parietal bone, was on the left side also.

For all these reasons, I incline strongly to the opinion that the paralyzing lesion existed in the left hemisphere, that the disease found in the right was secondary in point of time, and that the influence exerted upon the limbs was direct instead of crossed. And much do I regret not to have examined minutely the medulla oblongata, with a view to the possibility of the existence of an abnormal arrangement of the fibres of its anterior pyramids (a possibility suggested by Dr. Bright), which, if present, would form a ready explanation of the direct influence exerted in the two attacks of paralysis.

This case is highly interesting in other respects, such as showing a coincidence in the same individual of the syphilitic, gouty, and scrofulous *materies morbi*; but as my object in recording it has been simply to call attention to the exceptional character of the nervous disorder, I shall forbear to enlarge upon its other salient points.

Norwich, July, 1867.

ON UNNECESSARY ORTHOPÆDIC OPERATIONS.

By W. J. LITTLE, M.D.,

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(Continued from Sept. No., p. 205.)

THE TREATMENT OF INFANTILE CLUB-FOOT WITHOUT OPERATION.

BEFORE passing to the treatment without operation of suitable cases of infantile talipes varus, I may stop to correct an impression existing in the minds of some surgeons—viz., that it is my opinion that whenever the operation is indicated, its performance should be postponed until the age of seven or eight months, so that the foot may be restored in form before the period at which a healthy child usually walks. Such was my

opinion in 1839;* but whoever has done me the honour of attentively perusing my subsequent writing will have found that I have gradually advocated operation at an earlier period when clearly necessary, until for many years past I have been accustomed to perform it, and recommend it to others, during the second or third month of existence.

The question of operation should be postponed until the approach of the age for walking in any case in which the surgeon believes in the practicability of cure by other means. The time employed by the practitioner, even in an unsuccessful attempt to cure by mechanical means, will, if he is not an adept, be well spent in acquiring tact in the management of mechanical treatment; the experience thus gained will be available when the operation indubitably appears to be necessary. Indeed, many good surgeons have bungled over their operated cases of varus through not being practically conversant with mechanical after-treatment.

In the slightest cases amenable to mechanical treatment the nurse may, by diligent rubbing, manipulating, or placing the feet in an improved position, remove the incurvation, even within the month. In cases somewhat more severe, in which a shortened condition of individual tendons is more apparent, the medical attendant may apply, by means of a roller-bandage, a well padded tin splint, bent to an angle somewhat less obtuse than that which the deformed foot naturally assumes, altering the angle of the splint from time to time as he finds the foot yield. The foot should first be covered with a few turns of the bandage.

The more decided is the incurvation of the toes the more necessary is it to direct attention to reduction of the varus to equinus (or pointed toe) before attempting to bend the foot.

The secret of success consists in applying the bandage and the splint with sufficient tightness to prevent its being continually displaced by the infant, but sufficiently loose not deeply to indent the limb, excoriate the integuments, or still worse, occasion sloughs upon the projecting heel or malleolus. It should be regarded as an axiom, that it is preferable that the apparatus should be repeatedly removed during the day rather than undue pressure be maintained, and that on no account it should be applied so as to cause crying, restlessness, or other form of suffering. Whenever the apparatus has become disarranged, soiled, or when purposely removed at least thrice in the twenty-four hours, frictions and manipulations should be practised. This part of the treatment may, and should be, conducted quite painlessly to the infant, and be gradually intrusted to an able parent, nurse, or assistant. The more frequently removal and manipulations take place, the less will the child complain of the process. It will be found, as a rule, in orthopædic practice, that the attempt to move any articulation, after it has been long retained in one position, is painful,

and is usually more or less successfully resisted by the child, according to its age.

By mere removal, the attendant may observe how his pains-taking application of the splint has been endured by the limb, what alterations in the mode of application seem desirable, to what extent improvement has rewarded his labours, whilst the infant is indulged in temporary freedom of action of the part.

By frictions, congestion and engorgement are removed, and the temperature of the part equalized. By manipulations, working and stretching of contracted parts, the joint is maintained free from rigidity, no set of muscles is permitted to atrophy from disuse, or to become contracted whilst another set is being elongated, which is a common consequence of weeks' sojourn unmoved in an apparatus. Above all, the contracted parts are, by manipulations, actually elongated, and the improved limb fitted for a splint more nearly approaching the form of the healthy foot.

I would here lay down another axiom in the treatment of this and many other distortions—viz., that the apparatus should be employed almost less as a means of forcing the lapsed part into a good or a better position, than as a means of preventing its relapse into a bad position after use of manipulations.

Pasteboard, gutta-percha, or moulded leather splints, may be used in lieu of those made of tin, but these are preferable. Every surgeon will employ with the greatest advantage that material or apparatus with the use of which he is most familiar. More depends upon his tact and diligence, as well as upon the perseverance of the patient's friends, than upon the apparatus selected.

If the case has not greatly yielded by the age of three months, or if difficulty is experienced in maintaining proper adaptation of the splint, a more elaborate instrument may be resorted to. The simplest, least expensive,[†] and most effective is that modification of Scarpa's original instrument, sold by Ferguson under the designation of "Dr. Little's thumb-screw movement shoe for varus."* It is less complicated, lighter than those manufactured with male and female screw, cog-wheel, or ratchet-screw movements, and has the peculiar advantage of not impeding action of foot in one direction. It consequently permits manipulation of foot in one direction without removal of it. Viewed theoretically, this apparatus seems incapable of the same powers of adjustment, to a required angle whilst on the limb as other instruments, but in practice it will be found that it is convenient, on the few occasions on which it is desirable to alter the adjustment, to do it when the apparatus is removed. I may mention that even in adults this thumb-screw movement is preferable in all forms of foot-deformity where the greatest rigidity does not exist, especially when walking exercise may advantageously be permitted. By pursuing the

* *Treatise on the Nature and Cure of Club-foot and Analogous Distortions.* 1839. p. 171 et seq.

† Represented in *Treatise of Deformities* by the author 1858, fig. 119.

treatment with the help of this instrument, aided by frequent removal, friction, and manipulation, precisely as in the treatment by splints, the practitioner will be surprised and gratified with the result in cases which may not have appeared promising.

In the treatment of infantile varus without operation, as with its assistance, it is, I repeat, of first importance to obtain eversion of point of foot before attempting depression of heel—in short, to convert the varus into equinus. It will be observed that after the condition of equinus has been obtained, and the attendant considers that bending of the foot alone remains to be effected, a constant disposition of the foot to roll over on its external edge manifests itself. In such cases the practitioner should never advance the screw which bends the apparatus, unless he is certain at each stage that he has effectually conquered the varus tendency.

A common complaint of nurses and others is that they are unable to keep the heel down. This is a certain sign of the apparatus having been advanced in the direction of bending more rapidly than the foot has yielded. It indicates therefore that the apparatus must be put back into a less bent position. The surgeon should continually have present to his mind the axiom, *arte non vi*—gentle compulsion should take the place of force; and on no account should he be tempted or betrayed into the use of such pressure and force as will occasion pain, excoriation, or sloughing, under any form of treatment. In the infancy of modern orthopædic practice, owing to a prevalent belief that a cure after tenotomy was absolutely required to be effected before the tendons were firmly re-united, the more haste led to the less speed, and such consequences as excoriation, &c., were common; and my ingenuity was much taxed to devise means of pursuing the treatment under such unfavourable circumstances, whilst for many years past, in my own practice, with patients of all ages, I have not once seen so much as an abrasion of cuticle. Nothing is so much calculated to embarrass the treatment, or even defeat it, whether or no the surgeon has resorted to operation, as the occurrence of a wound through undue pressure upon a part, the integrity of which is essential, as the fulcrum upon which all apparatus is called upon to act. Under instrumental treatment, wounds can only arise through ignorance, negligence, and impatience.

If the progress made does not correspond to the pains taken, and the essential characters of the talipes varus are almost as marked as at the outset, or are even more strongly marked, the surgeon must conclude that he has either selected an unsuitable case for instrumental treatment or that some accidental or other cause has neutralized his efforts; and such causes are easily found amongst the difficulties of orthopædic practice, such as unfavourable health of patient, remissness or want of skill of nurse or parent, an unwonted leaving off of apparatus either by day or night; and he must therefore, without further

delay, if the child is approaching the time for walking, perform the necessary operation, remembering that, as the operation is an important, or in severe cases, an indispensable adjuvant, he will have similar difficulties with the instrumental treatment after operation to those he has encountered before it. These difficulties are nevertheless surmountable by the surgeon who, with proper knowledge of his profession, and the necessary mental qualities, has the requisite time at his disposal.

(To be continued.)

ON A CASE OF POISONING BY TWELVE DRACHMS OF LAUDANUM.

REJECTION FROM THE STOMACH NINE HOURS AFTER WITHOUT SYMPTOMS OF NARCOTISM; RECOVERY.

By GEORGE D. GIBB, M.D., M.A., F.G.S.

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DR. CHRISTISON relates a case in his work on Poisons of a man who swallowed an ounce and a half of laudanum, and in an hour, half as much more, and lay down in bed. Some excitement followed, with numbness of the extremities. He continued sensible and so lively for seven hours after the first dose, that a medical man did not believe his statement. It was not until the eighteenth hour that stupor set in, and in two hours more the symptoms of poisoning by opium were of an aggravated kind. He finally recovered under treatment, but the cause of the protraction of the symptoms could not be ascertained.

Recollecting the record of that case, and knowing that the symptoms of poisoning by opium are sometimes protracted, I was not unprepared for what occurred in the following case; I must confess my mind was subject to considerable doubt at first as to the quantity of laudanum taken, but the proofs were rendered so clear during the progress of the case as to permit not the shadow of a doubt any longer to remain. The poison was taken with a felonious intent, the act having been contemplated for some time. The effects of the drug were pretty well understood by the individual himself, and when swallowed dissolution was anticipated within an hour. The twelve drachms filled a stoppered vial, purchased from a druggist in Red Lion-street, under the pretence it was wanted for a voyage with his family. On tasting the two or three drops which remained, it had the well-known flavour and bitterness of the ordinary tincture. It was swallowed in two doses, one taken almost immediately after the other, with results of which the following narrative is a brief outline:—

A gentleman, seventy-two years of age, possessed of much activity, but in embarrassed circumstances, swallowed an ounce and a half of laudanum at eleven P.M. on July 15th, with the intention of destroying himself. He passed a restless night, not in the least inclined for sleep,

and was more or less excited the greater part of the time. At seven o'clock on the following morning the servant knocked at his door as usual with hot water, when he told her to come for me, as he was very unwell. I reached his residence before half-past seven, and found him in bed quite rational and unexcited. He had not slept the whole night, he said, which circumstance made him think he was past recovery, and as there was now no chance for life, he wished to give me some directions before he died. I learnt from him that he had taken laudanum in the quantity named, and at the hour mentioned. The pupils were contracted, but not completely so; he was a little exhausted, and did not speak with his usual firmness of voice.

I quickly procured the assistance of my friend, Mr. Roberts, of Great Coram-street, and in our presence, at eight o'clock, he spontaneously vomited a quantity of fluid from the stomach, which contained the greater part of the laudanum, the smell of which was unmistakable, and the bitterness as great as when it was swallowed the night before. The name of the druggist who sold the laudanum was ascertained, the stoppered vial which had contained by measurement twelve fluid drachms was sent to him, and we learnt, on clear evidence, the laudanum was a pure and genuine article, and had been purchased at the time stated by our patient. We then gave him a breakfast-cupful of strong coffee, which was rejected in about a quarter of an hour, with much mucus. The coffee was repeated in twenty minutes, but only a portion of it was taken, and he remained quiet. His pupils were now more dilated than they were, and no constitutional disturbance was manifest. He was, perhaps, in the slightest degree drowsy. We left him at nine o'clock, in charge of a careful nurse. Ten A.M.: I saw him again; he had been perfectly quiet; his pulse was 60, full, regular, and strong; pupils slightly contracted, drowsiness a little more marked; his ideas not easily collected; skin somewhat hot. He had taken nothing since previous visit. His lips were all along of a healthy pink colour, and the tongue was clean. As he felt squeamish, I prescribed an emetic of twenty grains of sulphate of zinc to be taken at once.—Four P.M.: As before, quiet and calm; skin clammy, but warm; pulse 60, full and regular. Still nauseated, but had not vomited, even after the emetic.—Half-past eight P.M.: Saw him with my friend Dr. Logan. Skin drier and warm; pulse as before; rational and calm; pupils a little contracted. He had some nausea after waking from a doze, in which he snored loudly, and vomited freely, which was encouraged by draughts of warm water. The egesta were a mixture of coffee and water, and smelt sour. He had dozed occasionally during the last four hours, but had not actually slept. He felt very languid and weak.

July 17th.—Ten A.M.: Perfectly recovered in every respect, but disposed to vagaries; had slept well the greater part of the night. Pulse 58, not so full, softer, and more natural; pupils natural. Eight P.M.: Feels giddy on attempting to get up.

From this period he had no more uneasiness, and got quite convalescent.

For nine hours the twelve drachms of laudanum remained inactive in the stomach, without any symptoms of poisoning; vomiting then ensued, which was followed by perfect recovery. The case is solely remarkable from the fact of no symptoms of stupor setting in, which I should have ultimately looked for as in Dr. Christison's case, had not vomiting occurred. Watching was still, however, necessary. In the course of my experience, an instance occurred under my care, in which three drachms of the tincture proved fatal, although remedies were actively employed, in a sailor, the subject of exhausting suppuration of the knee-joint. In the present instance my patient was a healthy and very temperate man, of remarkable age, and not in the habit of using opium at all. This case is only equalled by the one of the student described by Dr. Taylor,* who swallowed *four ounces* of laudanum at nine o'clock in the evening, went to bed, and slept till six the next morning, when he vomited freely, and recovered.

Guildford-street, Russell-square, July, 1857.

ON A CASE OF LUPUS EXEDENS.

By R. BARWELL, Esq., F.R.C.S.,

ASSISTANT-SURGEON TO THE CHARING-CROSS HOSPITAL.

FROM many observations that I have been able to make upon indolent ulcers, more particularly upon lupus, I am led to the belief that the application of violent caustics, as usually practised, is more injurious than otherwise. The tissues surrounding the ulcer are passively congested, and are also more or less infiltrated with an aplastic or cacoplastic material. When to such structure a strong caustic (nitric acid for instance) is applied, the parts in immediate contact with the escharotic are of course killed; those surrounding the eschar are influenced less violently, and are benefited for a time by the astringent power of the drug, which diminishes the congestion and the spongy condition. In a few days, however, the action necessary to throw off the slough restores the congestion; effusion and doughy thickening follow as a matter of course, and the result is the extension of the disease upon a larger base.

From this groundwork of observation I was led to believe that the proper local remedy was a pure astringent void of all irritant action, and I made many cautious experiments upon ordinary indolent ulcers, with a view of ascertaining the best form of application. It appeared that mineral and earthy substances, if used sufficiently concentrated to produce a decidedly astringent effect, were also irritant; such at least was the case with the ordinary sulphates, nitrates, and acetates. Vegetable astringents, pyrethrum, kino, catechu, and many more, were then tried, with such results

* Taylor on Poisons, 1848, p. 597.

as induced me to make use of them in the following case :—

S. N.— came to me on the 15th of December, 1856. She is fourteen years old, small for her age, slim, of dark sallow complexion, and has on the upper lip a budding of hair, rather profuse for so young a girl. The circulation is languid, and she suffers much from cold feet. Catamenia have not yet appeared. The nose and right cheek are the seat of a foul, unhealthy ulceration, surrounded by spongy tissue of a dusky red colour. The whole nose is thickened and enlarged by a tough inelastic deposit. The redness nearly reaches the cheek on the left, and on the right side extends some distance on the face; the whole surface is studded with angry pimples and blotches. The sore itself covers the right ala nasi, has eaten through it in one part, and extends upon the top of the nose and upon the right cheek.

She states that in February, 1854,—that is, nearly three years previous to my seeing her, the disease appeared on the right side of the nose as a number of small pimples; these increased in size and number, and in about eight months broke out into an open sore. She has since that time undergone a great deal of treatment: the sore has been burnt with nitric acid, with potassa fusa, and nitrate of silver, of which applications she has great dread, and under which she did not improve.

A purified preparation of catechu, made by dissolving several times, pouring off the clear liquor, and evaporating to the consistence of treacle, was spread upon linen, and applied over the reddened skin and ulcer; this was continued daily. The redness diminished to a considerable degree, and the pimples seemed less angry. In three weeks, however, the discharge began to increase again, and the application was changed to a strong decoction of oak bark. This preparation also answered for a month extremely well; the size and congestion of the parts continuing to diminish.

On the 10th of February tannic acid was used: it was dissolved in as small a quantity as possible of water, and applied with a camel's hair brush. Each application almost instantly reduced the redness of the skin, and dried into a scab, which on the following day was removed, and a reapplication made. This treatment went on for some time, the sore decreasing in size. Occasionally a little disturbance in health would throw her back for a time; but still the improvement was tolerably uninterrupted.

On the 15th of May I began to diminish the strength of the tannic acid to so thin a solution that it did not form a scab, and this I let her apply night and morning.

On the 22nd of June the solution used was only of the strength of twenty grains to the ounce, and on the 6th of July the sore was healed and the redness had nearly disappeared. It is probable that, in a short time, only the scar of the old ulceration will be left.

Burlington street, July, 1867.

RECOVERY AFTER SWALLOWING A LARGE QUANTITY OF ARSENIC.

By THOMAS GODFREY, Esq., M.R.C.S. & L.S.A.,
Mansfield.

A MIDDLE-AGED woman, in perfect health, and of violent and impetuous temper, swallowed, in a paroxysm of rage and jealousy, a quantity of arsenic, equal in bulk to about a dessert-spoonful. This she mixed in half a cupful of water, and swallowed it, having partaken freely, a few minutes before, of an abundant dinner of meat and suet pudding. Her violent excitement having soon after subsided, she confessed the fact, having previously informed her sisters, who witnessed the act, that she had taken magnesia. I arrived in about one hour and a half from the time of her swallowing the dose; and being unaware of the nature of the occurrence, could only exhibit an emetic of sulphate of zinc, which I happened to have with me. This produced frequent vomiting, which was promoted by repeated draughts of warm water. Having obtained hydrated peroxide of iron from my surgery, for which I had to send one mile and a half, I administered it freely, suspended in treacle and water, so that in three hours from the time of swallowing the arsenic, she had drank about four pints of water, and from seven to eight ounces of the peroxide, no portion of which was retained beyond five minutes. At one time the prostration became alarming, the pulse being rapid, and barely appreciable, the features distorted, cold perspiration of the body, and severe rigor.

In five hours from taking the arsenic, she resolutely refused to swallow more liquid; and as she had rallied considerably, and appeared drowsy, she was permitted to sleep for seven hours, when she appeared quite recovered, and free from any suspicious symptom beyond a slight epigastric tenderness, which I referred to the frequent vomiting, but for which, as a precautionary measure, I prescribed calomel and opium. In twenty-four hours from this time, I discontinued the pills; nor was there any indication for further treatment, her convalescence following so rapidly that in five days she had resumed her domestic duties.

Nottingham, July, 1867.

ON THE MENTAL, NERVOUS, AND CONVULSIVE DISORDERS TRACEABLE TO PHYSIOLOGICAL OR PATHOLOGICAL CONDITIONS OF THE SEXUAL ORGANS IN WOMAN, AND MORE ESPECIALLY TO THE OVARIA.

By THOMAS LIGHTFOOT, M.D.

(Continued from May No., page 290.)

SECTION III.

THERE is something peculiar, as might indeed be anticipated from the known nature of the organs, in ovarian excitement—a something which morbid anatomy may possibly never explain. It

is not actual inflammation of these organs which gives rise to the disturbed conditions of the cerebro-spinal system which we have just considered in the preceding sections, and the much more serious one to which I have now to request the attention of the reader: it is rather to an exalted condition of a healthy physiological action than an inflammation, properly so called, that we must trace the disturbance of the spinal system giving rise to convulsions of various kinds, included under one generic term—hysterical, and that fearful disorder of the cerebro-spinal system itself, terminating in an aberration of the judgment, perversion of all mental actions—in brief, in madness.

Between this extreme and last condition of the disease, and its dawning or threatenings, there are many stages which friends and relatives are apt to overlook and to mistake; and it is often only when unequivocal symptoms of madness have shown themselves, that the physician is at last consulted—that is, when his advice or skill, whatever it may be, can avail but little.

The peculiarity, then, in this class of diseases to which I allude, seems to be this: the ovaria may be destroyed by abscesses, and the profuse flow of matter; broken up and destroyed in a great measure, they may become the seat of malignant tumours, cancers, fungoid, hæmatoid, or, lastly, be converted into shapeless masses of cysts of various natures, self-producing or otherwise, or be converted into a mass of fat, of hair and teeth, without in any way affecting the mind or the body, otherwise than by their bulk or by effects on the general constitution, similar to those produced by similar diseases in the organs of the body. Pathological anatomy proves all this, though in a negative way; but it is not yet sufficiently refined to detect in the ovaria the peculiar condition productive of hysteria and madness; for madness is, we shall find, a sufficiently common result of disturbed ovarian function.

Here is a type of one form of the disease: A young lady, carefully brought up, mingling with no common herd of people, but daily under the eye of a prudent mother and careful governess, reaches the nineteenth or twentieth year of her age. She has already mingled with society, and that society is of the best. Some little eccentricities appear which are merely checked as they arise, and are thought but little of; some disposition to be forward, when men are present, at last appears. Seclusion is attempted and enforced; but all in vain, mania bursts forth. From a modest, delicate, tender maid, she becomes a wanton, and makes alarming proposals to every man she meets: there is the madness of lasciviousness in her looks, and her eyes glisten with passion. But how is it that her language has so changed? Those lips out of which there had never come before any indecent expression, now pour forth a volume of obscenities not often heard in any society! This is human nature when the intellectual part has lost its control over the animal;

that most beautiful of all beings—the lovely, reasoning woman—sinks into the animal.

What has caused this? What can have so completely metamorphosed, and degraded by this metamorphosis, the most beautiful—the most perfect of all Nature's works? A disturbed, perverted, and exalted condition of those organs whose presence made her a woman; whose healthy condition, and the right employment of whose functions, give health and strength, beauty and dignity, tenderness and grace; whose disturbed and sur-excited conditions lead to obscenity, turpitude, madness. Cases such as I have just described are but too common; nevertheless the disease more frequently appears later and under a somewhat more different form. After a variety of mental peculiarities, of extreme modes of thought, chiefly of a religious character; after, perhaps, a disappointment or two in love matters, or matrimonial arrangements at times sadly mismanaged by busy meddling connexions or relatives, the lady, now approaching twenty-seven, becomes suddenly insane.

A young lady, aged twenty-one, in the bloom of youth, marries the man of her choice, but no family follows this union, though seemingly a happy and fortunate one. At twenty-eight, that is, when at the prime of life, and about to enter on that downward progress, terminating only with life, an imprudent person brings her information that her husband is unfaithful to her, keeping a concubine in a neighbouring street. The time selected for imparting this information, which concerned her not, was most unfortunate. The lady was just recovering from a severe rheumatic attack, and had that instant left the bath. Next day she became insane, made many attempts at self-destruction, but happily without success. Removed to an asylum, she recovered in eleven weeks, never to the present day—an interval of twelve years—having suffered a relapse.

It depends no doubt on peculiarity of constitution whether the disease assume a hysterical or maniacal character, but whatever form it may take on, it is still the same, and originates in the same cause, namely, ovarian excitement. Some it urges on to indecent practices, which are mere symptoms of the existing disease—results, not causes. Others, whether married or single, it urges on to impure acts, oft-repeated; Messalina, immortalized by Juvenal, is the type of this form of the disease. It supplies the streets, no doubt, with victims, and disturbs the happiness of thousands, and it furnishes to the madhouse a quota of its unhappy inmates. These, no doubt, are some of the evils originating in civilization; a penalty paid by man for artificial restraints placed on human passions. Forced celibacy, ill-assorted, commercial marriages, neglect of innocent youth, contempt for Nature's laws. Civilization assists, no doubt, in filling the madhouse, and other houses which need not be named.

CASE.—A young lady, approaching thirty-two, of good abilities, gentle and ladylike disposition, and of excellent education, finds it difficult, from

some family arrangement, to enter on matrimony. She passes her twenty-seventh year with difficulty, daily becoming more and more eccentric. The usual course of excitement is gone through. Without the smallest natural tendency towards religious feelings, and a head remarkably low in that region where such feelings are supposed usually to reside, she becomes fanatical, and raves about the "ministry of the Gospel." The usual routine of such excitement is gone through; meetings, social and otherwise, delay for a time the coming evil, which at last breaks forth in madness. She becomes implacable towards her mother; suspicious, cunning, malicious, vicious, malignant, obscene beyond all imagination. And now comes out the natural character—the pure animal; the mask imposed by education, birth, society, rank, is thrown off at once, and all that we are wont to consider as opposed to humanity, as not human, but as characterizing the brute, having now established itself, the necessity arises for the removal beyond the pale of society of the individual whom social conventionalities have plunged into this sad condition. This lady recovered.

The class of disease of which I now treat requires, on the part of the physician, the greatest caution, both as to diagnosis and treatment. Family connexions interfere, family interests, interested views.

But I return to the question of insanity originating in ovarian excitement. We have seen that it is not any actual pathological condition of the ovaria which excites those morbid sensations which, radiating towards the cerebro-spinal axis, at times disorder the spinal marrow, producing hysteria under all its Protean forms; at times extending upwards to the medulla oblongata, influencing the cerebral hemisphere, and upsetting the judgment. These terrible results depend, for the most part, on a condition of the ovaria the intimate nature of which is quite unknown to pathologists. But it is not the less real. The hypochondriac, when he flies to the river, or points a pistol at his head, or seeks the fatal cord, has no actual disease in the brain, nor perhaps in any other organ, and yet there can scarcely be a doubt but that some organ supplied by the sympathetic system of nerves is functionally diseased, radiating through that system to the brain itself those diseased feelings embittering all his mortal existence. So it is with woman. At forty-two or forty-five she does not become hypochondriacal. The liver has little or no influence over her, but she may become hysterical and nervous and disturbed in mind. If low-headed, she often becomes demoniacal—that is, terrified and fearful at the appearance of the demons which haunt the imagination; the furies pursue her, goading her on to madness. To the physical condition of lunatics late observers have given that minute and delicate attention which characterizes the present age. The observations are not more minute than those of the great observers of antiquity; on the contrary, they are much less so. But we describe

them now in detail; we give the details, they gave the results.

It has been noted and may readily be admitted, that well-established facial characteristics of disease are of great diagnostic value, especially in mania; but much of this must depend on the tact of the observer—that is, the physician, for there are some who observe everything naturally, and there are others who never can be taught to observe anything. Tact, the observance of minute differences, cannot be taught, cannot be acquired; it is a natural gift. A friend informs me that looking attentively at the insane he has been led to think that in some insane persons, male as well as female, no facial characteristics ever show themselves. In others, on the contrary, they are well marked. There is generally perversion of all the mental qualities, natural feelings and disposition. This is at least the general idea, although a different view might be taken of this subject. It is probable that in hereditary insanity the expression of the face, form of the head, &c., may be of more value than in others. In many cases, but not in all, the expression of the insane is brutal and degraded. In mania, the eye is unnaturally brilliant, quick, unsettled and projecting; in melancholia, it is dull, downcast, and evasive; there is also at times the *oculus bovinus* of authors. The mouth also has its peculiar character occasionally; the lips quiver and are agitated; saliva flows, but no verbal description can convey to the reader an accurate idea of such images. The external ear is said to be peculiarly formed in those subject to insanity; the lobe becomes elongated, misshapen, and vascular in insanity of long standing. The general complexion is also usually exceptionable, being sallow, sickly, and a peculiar odour is not an unfrequent accompaniment of insanity. I need not dwell on the bodily physiognomy of lunatics, their attitude and gait; the automatic movements of the incurably insane; the rumination occasionally present; insensibility to external impressions, as extreme cold or heat, hunger, thirst, &c. This is not a treatise on insanity generally, but has a reference mainly to those cases which are traceable to ovarian excitement or other pathological conditions of the sexual organs in woman which have fallen within the scope of my own observation. Difficult cases arise in practice, and especially in this practice—cases presenting great difficulties in diagnosis and treatment.

The preceding observations, if they do not afford any elaborate views of the disease, may, it is hoped, lead towards a clearer apprehension of the real sources or origin of the complaint; may enable physicians, by a careful attention to all the circumstances of the case, to forewarn relatives and friends of the possibility of certain results following a certain course, and especially when a tendency to insanity is hereditary, to warn the friends early of the terrible results which too often follow the neglect of Nature's laws.

A Mirror
OF THE PRACTICE OF
MEDICINE AND SURGERY
IN THE
HOSPITALS OF LONDON.

Nulla est alia pro certo noscendi via, nisi quam plurimas et morborum et dissectionum historias, tam aliorum proprias, collectas habere et inter se comparare.—MORAGNI. *De Sed. et Caus. Morb.* lib. 14. Proœmium.

GUY'S HOSPITAL.

ALL THE VARIETIES OF TUMOUR BELONGING TO THE CLASS ADENOCELE DEVELOPED WITHIN A SINGLE BREAST; SUCCESSFUL EXTIRPATION; THE GLAND ASSUMING ITS NORMAL OUTLINE.

(Under the care of Mr. BIRKETT.)

ONE of the most remarkable, interesting, and instructive examples of the development of all the known forms of innocent tumours affecting the mammary gland within a single breast we saw at this hospital some weeks back. The new growth was what Mr. Birkett described as an epitome of every variety of tumour which belongs to the great class adenocele, an account of which disease he has fully given in the first volume of the third series of "Guy's Hospital Reports."

In the tumour which was removed from the breast, under the influence of chloroform, we saw in the centre the chronic mammary tumour of Sir Astley Cooper, the pancreatic sarcoma of Abernethy, the sero-cystic disease of Brodie, the carcinoma mammæ hydatidis of Sir Chas. Bell, one of the forms of hydatid disease of the breast of Sir A. Cooper; in fact, every form of innocent growth in the breast described by such names.

The varieties of adenocele in the mammary gland are exhibited under three very different forms and aspects, and we have established, Mr. Birkett thinks by nature, three very marked divisions of these growths. These are of such interest in connexion with the case which we report to day, that we offer no apology for giving them:—

"The *first* division consists of new growths, which are compact, dense, firm, fibrous, lobed on their surface and in their interior, and enveloped in their own fibrous capsule. The *second*, of cystoid formations, having growths within them, which appear to spring from their walls; these growths being loose, pedunculated, and floating or sessile, and with no connective tissue between them, its place being often supplied by fluid. And the *third*, of cystoid formations, distinctly referable to the dilatation of a duct, or to a connexion with one, and containing growths which appear to spring from their walls."—p. 138.

Mr. Birkett has included in the first division those tumours termed by Sir A. Cooper, "chronic mammary tumour;" by Cruveilhier, "corps fibreux;" by Lebert, "hypertrophie partielle;" by Velpeau, "tumour adenoide;" by Paget, "mammary glandular tumour." In the second, the tumour described by Sir A. Cooper, "hydatid disease of the breast;" by Müller, as "cysto-sarco-

ma;" by Sir Charles Bell, "carcinoma mammæ hydatidis;" by Sir Benjamin Brodie, "sero-cystic tumours;" by Paget, "proliferous cysts." In the third, the variety described by Sir B. Brodie, in his lectures illustrative of various subjects in Pathology and Surgery, as arising "by a dilatation of portions of some of the lactiferous tubes."

We cannot venture into a consideration of all these; but it has been shown by Mr. Birkett that they preponderate in single women. He has given as many as 45 in 62 cases; and 46 cases were from 16 to 32 years of age, the remaining 16 being from 32 to 48 years. Most of the cases which have come under our own observation have been in the comparatively young, and generally single. External applications are utterly useless—day, more than worthless; removal by the knife is not recommended unless the tumour is large and its increase progressive; and what is especially cheering, the prognosis is always favourable. In the diagnosis of these cases, the personal history of the patient will materially assist manipulation and visual examination. If the tumour rolls under manipulation, and this proceeding gives pain, causes some excitement and flushing of the cheeks, and the pain continues, it may be considered pretty certain that the small hard tumour is an adenocele. When the tumour is larger, "the whole breast becomes pendulous, the skin stretched, its follicles very distinct, the areola expanded, and the nipple small and flattened, but not retracted." If cysts and solid growths co-exist, fluctuation is felt in some spots, and hard masses in others.

As former illustrations of adenoceles, but described under different names, we may refer to two cases of enormous cystic sarcoma of the breast, under Mr. Fergusson's care, at King's College Hospital (*THE LANCET*, vol. i. 1853); chronic mammary tumour, under Mr. Cæsar Hawkins, at St. George's Hospital (*ibid.* vol. i. 1854); cystic tumour of the breast, under the same surgeon (*ibid.* vol. ii, 1854); recurrent chronic mammary tumour, at Guy's Hospital, under Mr. Birkett's care (*ibid.* vol. i. 1855); and mammary glandular tumour, at the London Hospital, under the care of Mr. Adams and Mr. Ward (*ibid.*). These by no means represent *all* the varieties we are in the habit of meeting, but it is somewhat refreshing to dwell upon other forms of disease of the breast besides cancer, and the following example of benign growth in itself demonstrates, as Mr. Birkett has taken great pains to prove, that all these growths belong to one great class, and differ merely in their external forms.

P. C—, a married woman, aged thirty-five years, was admitted on the 4th of June, 1857, with the cystic variety of adenocele of the right breast. She is from the country, has been eight years married, the mother of five children, the last born on the 6th of January of this year. She is a milliner by occupation, of nervous temperament, and has enjoyed good and robust health. Catamenia are regular and normal, the breasts are well developed, and she has suckled well with both

breasts. The present disease was accidentally discovered in the spring of 1856; and shortly after weaning her fourth child, she observed a lump amongst the sterno-clavicular lobes of the right gland, which at first grew slowly, but rapidly of late. She described the pain as like little knives striking into it. Although her health was very good, she was weak from suckling and excitement. None of the axillary glands were affected, and no cause was assigned for the tumour. Her fourth child was born on the 6th of January, 1855, and suckled twelve months, the tumour existing altogether between fifteen and sixteen months. It was removed by Mr. Birkett on the 24th of June, under chloroform. At the time of operation, the whole of the clavicular and sternal lobes of the right breast seemed to be involved in the new growth, and the other lobes of the breast were pushed towards the axilla and abdomen. The half of the nipple towards the growth was expanded and flattened, the other half small. The surface of the growth was irregular and lumpy; the elevations were unequally prominent, and the furrows unequally deep. The skin over some was shining, and the capillaries were distinct, and in one sufficient to cause the surface to be red. Large cutaneous veins very distinct. Some of the prominences were softer than others, and one gave the impression that it contained fluid. The entire mass was quite movable on the pectoral muscle, but the limit between the gland and the growth was not well defined.

Two elliptical incisions were made, so as to excise the thin and injected skin. The growth was then carefully cut from the breast and traced towards the nipple. In doing this, one duct was divided, and from this milk flowed. The growth was very firmly attached to the lobes of the breast at its borders, and it had not a very well defined fibrous envelope.

The mass was composed of nodules of firm fibrous growths, cysts with intra-cystic growths, and solid, almost gelatinous contents, very succulent, and of a deep red, blood-tinged hue. In the centre was a firm fibrous nodule, white, and which seemed like a nucleus to the mass. Glairy, stringy fluid pervaded the growth. In this case, the operation was attended with very little bleeding. The patient has progressed most favourably, the breast has already resumed its normal outline, and the nipple is as perfect as if no disease had ever deformed it. She is now convalescent.

ST. BARTHOLOMEW'S HOSPITAL.

Extensive Necrosis of the Femur existing Five Years, associated with numerous Fistula and Sinuses, Deformity of the Thigh, and Anchylosed Knee; Amputation just below the Trochanter; Fatal Result.

(Under the care of Mr. STANLEY.)

THIS was really a very remarkable case of a little girl, although she was fifteen years of age, who had most extensive disease of the right thigh for five years, with present shortening of the limb to the extent of four inches, although, as she lay on

her bed, the shortening appeared to be about seven or eight inches, as the heel of the affected leg, rested in the middle of the opposite leg. The thigh bone was curved outwards. There never had been a fracture, and the actual shortening was considered due to arrest of development in the femur only, because the rest of the limb was apparently natural and well-formed, the foot especially. It appears that when ten years old she was at the sea-side, and was emptying a basin of water on the shore, when she fell on her side and hurt herself. The following day she complained of pain in her thigh, and had an attack of inflammatory fever which confined her to bed. From that time to the present she has been a constant sufferer from inflammatory processes which have taken place in the thigh and knee-joint. She was admitted into hospital two months ago, with numerous fistulous openings and sinuses in different parts of the thigh, which discharged matter. The knee-joint was enlarged and anchylosed. Several cicatrices of healed-up orifices were present; one of these was situated on the outer side of the hip, above the trochanters. It became a question whether the limb, in its present state, would ever prove of use to the poor girl, taking into account the period which had elapsed since the commencement of the disease. "None of us had a doubt," Mr. Stanley remarked, "that there was a necrosis of the femur." The doubt which did exist, was, whether it would be better to remove the dead bone, or—taking into account the extent of the disease, the useless knee-joint, the shortening, &c.—to amputate the limb. All these points were fully considered and the predominance of opinion amongst the surgeons was in favour of amputation, as the best means of saving life.

Chloroform was accordingly given on the 4th of July, and the limb was amputated just below the trochanter. The anterior flap was made first with a short knife, cutting from within outwards with a sweep from the pubes to the hip, across the thigh. The femoral vessels were now secured. The posterior flap was then made, cutting also from within outwards across the thigh posteriorly; transfixion not being employed at all throughout the operation. The bone, where sawn off, was enlarged but healthy, as were also the tissues around the stump; and, as the vessels were secured at an early stage of the operation, comparatively little blood was lost. The flaps of the stump were brought together by broad strips of adhesive plaster, without using sutures, the whole being then covered by wet lint.

The amputated leg was slit up over the femur, when the soft structures surrounding the bone were found loaded with fat—in a state of fatty degeneration, as is commonly found in such cases, when the muscles have ceased to be used. The femur was enlarged, but not unsound in texture; a large portion of its shaft was necrosed; a distinct sequestrum, consisting of the entire circumference of the bone, about seven inches long, occupied a fossa at the side of the bone, extending to the ham, alongside of which was a considera-

ble deposit of new bone. The knee-joint was gone, the articulating surfaces being completely destroyed.

She went on well for two days, when erysipelas attacked the stump, which was followed by very sudden collapse and death on the third or fourth day.

There can be no doubt that the sequestrum could have been very easily removed, without resorting to the serious operation which was performed; but whether it would have left the girl an useful limb is a question easily solved in the negative.

KING'S COLLEGE HOSPITAL.

Excision of the Knee-joint in a Man aged thirty-four, who had had a Stiff Knee since the Age of sixteen, followed lately by Destruction of the Cartilages and Disease of the Bones; Patella partly retained; the Patient walking six Weeks after the Operation.

(Under the care of Mr. FERGUSSON.)

At the present moment the student has the opportunity of seeing thirty cases or more in the London hospitals, in which excision of the knee-, the hip-, or the elbow-joint, has been practised. Of these, King's College Hospital alone contains five excisions of the knee, two of the hip, and two of the elbow, which have been performed since the 1st of May last. At the same time it may be truly said that, with scarcely a single exception, all are doing well in the strictest sense of the word. We contemplated giving these resections in the form of a series, such as were presented to our readers about this period of last year in our "Mirror;" but their number entirely precludes our doing so. Our object has, however, been attained, in drawing the attention of the profession to the subject in the pages of this journal, and the result has been that, with the knee especially, it is a rare circumstance now to see amputation performed when there is the slightest chance of saving the limb by excision. We shall continue, however, to give short records of the cases as they occur, several of which appear to-day; also placing upon record from time to time instances which will serve as good illustrations of the operation and its effects generally. On this occasion we present one of excision of the knee in a man aged thirty-four, which was followed by such a rapid cure that he was enabled to go about the ward on crutches in the short space of six weeks. He walked into the theatre of the hospital on the 13th June, and we again saw him in the same place on the 18th instant. This case is remarkable for the great improvement which took place in the patient's health almost immediately after the operation, and also for the short time during which he was confined to bed, scarcely six weeks. Another peculiarity was, that there was no change of splint or pads throughout the treatment—a point of some im-

portance. The suppuration was of trifling amount, the result no doubt of the careful adaptation of the cut surfaces of the bones.

We are indebted for the notes of the case to Mr. Christopher Heath, house-surgeon to the hospital.

Edward O—, aged thirty-four, admitted into London ward February 7th, 1857, with disease of the knee-joint. He is a native of London, a French-polisher by trade, and has lived freely. When sixteen years of age he fell and struck the knee, which swelled considerably, but subsided under the use of leeches and blisters. The joint, however, remained weak, and he walked with a stiff knee. Six months ago it became very painful, so that he could not put his foot to the ground. The joint has since been leeches and blistered again, but without any good results. On admission, the knee was slightly enlarged, there being some effusion into the joint. There was great pain in the joint when pressure was made on the patella, or the tibia pressed against the end of the femur. He was unable to sleep from the violent startings of the limb at night, and is in consequence much reduced in health, and of a pale, weakly appearance.

Feb. 10th.—Blisters were applied to the knee without relief.

15th.—The limb was placed on a splint, and suspended in Salter's swing, which, together with fomentations, relieved the startings.

March 4th.—Knee less painful, and startings less frequent.

31st.—Mr. Fergusson made a puncture with a grooved needle into the joint, and gave exit to some purulent fluid.

April 23rd.—Mr. Fergusson made a free incision into the anterior part of the joint, and a probe passed into the wound detected dead bone in the head of the tibia.

May 2nd.—The man being much reduced by the constant pain, and the joint being very seriously implicated, Mr. Fergusson determined to excise the joint this day, amylene having been administered. The usual H-incision was made, and the structures in front of the joint having been divided, the patella was found to be displaced, being quite on the outer side of the joint, fitting in a grooved depression on the corresponding portion of the tibia. A slice was removed from the inner condyle, the outer having apparently been absorbed to a great degree. A slice was then removed from the tibia, as also some of the thickened semi-cartilaginous tissue around the joint. The patient was removed to bed, and in about two hours, all oozing having ceased, chloroform was administered, and the limb put up in the apparatus in common use for resections of the knee-joint in the hospital, great care being taken accurately to adjust the cut surfaces of the bones by means of the finger introduced through the sides of the incision. Half an ounce of brandy was given every two hours, and half a drachm of tincture of opium at night.

3rd.—Patient passed a tolerably good night

pulse 120; tongue furred; knee starts occasionally.

5th.—Progressing favourably; pulse 120; bowels open; wound healthy; granulation commencing.

8th.—Pulse 100; wound discharges freely, and pale granulations springing up; stitches removed. Ordered red lotion to wound.

14th.—Granulations healthy and abundant; appetite and general health good; limb in capital position.

17th.—Very little discharge from wound; granulations filling up rapidly; the inner portion of the transverse incision nearly cicatrized.

28th.—The incisions are in great part cicatrized; there seems to be considerable firmness in the knee; health very good.

June 2nd.—Cicatrization still advancing; limb in excellent position; no pain in the joint.

10th.—The splints were removed to-day for the first time since the operation; union between the bones very firm; the limb is perfectly straight, and there is shortening to two inches and a half. Gutta-percha splint applied. Incisions healing rapidly.

13th.—To-day (being exactly six weeks after the operation) the patient walked into the theatre upon crutches, and stood on his feet without any support. The limb is entirely free from pain.

July 8th.—Wound entirely healed, with the exception of a small sinus by the patella; ankylosis become firm; leg perfectly straight; is able to rest upon the limb when gutta-percha splint is applied, without any pain. Will be sent to a convalescent institution next week.

CANCER HOSPITAL.

Cancer of the Breast, extending to the Ribs and Neighbouring Tissues; Cancerous Deposits in the Lungs, Pleura, Pericardium, Liver, and Stomach, with Thoracic Effusion and Cardiac Displacement; Renal Calculi.

(Under the care of Mr. WEEDEN COOKE.)

On the present occasion, we present an instance of cancer of the breast which proved fatal, the disease being disseminated throughout various organs in a wonderful manner, and too truly proving the constitutional character of this dire disease, and the utter impossibility of eradicating it by mere local measures. There was, however, in this case, a tendency to aggravation by any slight cause, such as a cold, depending upon the vices to which the patient was subject, which tended in a great measure to general dissemination of the disease. As the report shows, all the important organs of the body were infiltrated, and we have no doubt the microscope would have shown the spleen and pancreas equally the seat of the cancerous germ, as well as the other viscera. The tendency of old age, as every physiologist is aware, is to produce ossific deposit in the costal cartilages, a fact which every student soon finds out who performs autopsies on the aged. Now, this condition was reversed, in the following case, in the

ribs, for they were converted into cartilage near the seat of the diseased breast—that is, there was a molecular destruction or absorption of the osseous tissue, which gives the bone the appearance as if macerated in a mineral acid; this is called carinification of bone by some pathologists. The subjoined abstract we have taken from the hospital case-book. A case resembling this in many respects was brought before the Pathological Society by Dr. Habershon in February, 1855, and is recorded in the sixth volume of the Society's "Transactions," p. 321; the bones were more extensively diseased.

Mary Y—, aged sixty-two, of Dartford, admitted March 3rd, 1856. Has had cancer of the left breast for four years. The whole breast is now ulcerated deeply, and bleeds frequently; she is very anæmic and emaciated. She has always refused operation, although proposed to her by many surgeons. Some months ago the breast spontaneously sloughed, and subsequently showed a disposition to heal; but the occurrence of a cold or any trifling ailment aggravated the disease, and she is now in a deplorable condition. Unfortunately she has not been temperate either in spirits or opium, and the great dyscrasia is no doubt to be attributed to that cause more than to the disease. The perchloride of iron always checked the hæmorrhage, and a lotion of chlorate of potash and hydrochloric acid, with the carrot poultice, kept the ulcer clean and free from unpleasant odour. She sank on the 17th of March, fourteen days after admission, and exhibited the following post-mortem appearances ten hours after death: Body not greatly emaciated, and some œdema of the legs. In the position of the left mamma there was the large flat ulceration with thickened edges, the cancerous induration extending down to and between the ribs, so that it was impossible to separate, as usual, the integuments from the rib; and in order to raise the sternum it was necessary to cut through the sessile cancer and ribs at the same time. This act, by the ease with which the knife cut through the ribs, showed that the cancerous degeneration had extended itself to these bones; they were gradually assuming the same cartilaginous appearance as the outer edges of the cancerous ulcer external to them. The lung of this side (the left) was greatly atrophied, and had several patches of scirrhus in its substance. Dotted about the plura costalis were many scirrhous tubercles the size of a pea; and filling the cavity of the pleura there was serum to the extent of two or three pints: thus the heart was pushed over to the right side. Upon the pericardium there was a large crop of scirrhous tubercles already mentioned. The right lung was tolerably healthy, having only some slight emphysema, and two very small patches of scirrhus. The heart was dilated and hypertrophied; both cavities were filled with dark clots. The mitral valve contained several portions of osseous deposit, and the cordæ tendinæ were shortened. The aortic valves were so thickened, that they could have had very little power during life to resist the re-

gurgitant action. The liver was greatly enlarged, and had two considerable cancerous deposits, one on the upper surface of the left lobe, and the other on the under surface, to the left of the gall-bladder; they were white scirrhus, and resembled puckered cicatrices. The stomach was diminished in size, and in the pyloric orifice there was scirrhous deposit, reducing the aperture to the size of a goose quill. The spleen and pancreas were unusually hard, but not altered in structure. The right kidney was healthy, but the pelvis of the left contained twelve small calculi, and one of the size of a nutmeg. The intestines were healthy. The bladder and uterus normal, but the ovaries were converted into cysts, each the size of a large orange.

Scirrhus of the Male Breast, in a Man aged Fifty-six, supercening upon an Injury.

(Under the care of Dr. MARSDEN and Mr. COOKE.)

THIS case, in a few words, is that of an apparently healthy man in every respect, aged fifty-six years, who met with an injury twelve months ago in a van, his left breast being squeezed between two portions of it. The breast became sore and tender, and hard lumps formed in it, which have remained to the present time. There is some swelling, and the circle around the base of the nipple seems retracted. The patient is a carpenter by trade, and has not been able to use his left arm freely until lately, although he has at no time been disabled by it. He had superficial ulceration at the time of the injury. It has been treated by mild, soothing applications, such as a weak lead lotion, &c., and latterly soap and lead plaster, sprinkled with a little camphor, has been applied with much benefit. It possesses, however, all the physical characters of true carcinoma.

On reference to Mr. Birkett's work on "Diseases of the Breast," we find he states that carcinoma very rarely occurs in the male breast; but of the two varieties of the fibrosum and mollare, he states that the former is more common than the latter, and, making allowances for the differences in structure, the appearances of carcinoma presented in the male, do not differ greatly from those observed in the female breast. He, moreover, observes it generally occurs late in life, and is not so active a form of disease as in the female, and the return of the disease after excision has not been so rapid. It, however, at last proves fatal.

This is the experience also of M. Velpeau, who has met with ten examples or more of cancer of the male breast. In relation to the cure, he observes, in the translation of his work on "Cancer of the Breast," by Dr. Marsden: "I am disposed, however, to believe, that extirpation, or the destruction by caustic of cancers of the mamma, offers more chances of success in man than in woman. To the cases of radical cure which I mentioned in 1839, I can add two others out of five operations. With the exception of these

slight differences, cancer of the breast proceeds in man as in woman; it ought consequently to be subjected to the same treatment and the same precautions."—p. 289.

The last Annual Report of the Cancer Hospital showed that three cases of cancer of the male breast had been under treatment since the hospital was first opened in 1851.

JERSEY HOSPITAL.

Extraordinary Self-mutilation.

(Communicated by G. M. JONES, Esq., M.R.C.S.)

WHILE on the one hand it is pleasing to think that the history and results of many of the cases we publish are of advantage to the profession at large, on the other, some few which come under the surgeon's notice are so disgusting in their details as happily to exclude the notion that anything similar is likely to be met with; these can be merely related as facts, not with the idea that his experience will be of use to others. The following certainly entitles my patient to the claim of originality, for the course pursued by him was unique, and I am thankful to believe scarcely any will be found to follow the same revolting process, which must be said to reduce man below the level of the brute:—

On the 12th of last month, I was called upon by two persons: one stated himself to be a French medical man; the other, his companion. The former, after informing me that he had not yet received his instruments from Paris, requested me to take charge of his patient, who had injured his genital organs. At first sight I imagined that catheters had been injudiciously employed, the man's shirt being almost through its whole extent besmeared with blood; this, however, proceeded from an extensive wound in the scrotum, the appearance of which, together with the answers I received to three or four questions of mine, led me to have the man removed to the hospital, when I lost no time in visiting him. On examining him more minutely than I had before, I found the left testicle protruding through the wound in the scrotum. It was completely strangulated, and had been so for upwards of ten hours; it had a mottled appearance like marble-paper, was in a state of considerable congestion, and presented spots here and there of a gangrenous character. The man's sufferings were great: he felt sick, had retched several times, was feverish and thirsty, with rapid pulse, and parched tongue. I first endeavoured to return the testicle by the taxis, but found it impossible to do so; and it was not without some difficulty that I succeeded in dividing the scrotal stricture upwards and downwards, for the purpose of effecting its liberation. It required five sutures to bring the parts together; and even this procedure, so generally easy, was not accomplished without some trouble; the edges of the wound were so cartilaginous (occasioned by numerous cicatrices) as greatly to impede the needle's progress. I shall

merely state, that for three or four days considerable constitutional disturbance existed; this gradually subsided under the influence of large and repeated doses of tincture of henbane. After a fortnight's stay in the hospital, this patient was discharged as convalescent.

The following is the history this man gave me, in the presence of others, of his youthful habits and present condition:—In early life he very frequently indulged in onanism, and to such an extent that when he attained the age of manhood he found himself almost impotent. In order to create sexual excitement, and subsequent masturbation, he tortured his imagination (*il torturait le cerveau*) to devise means by which he might gratify his filthy passion. For a considerable time he was successful; but some five or six years ago he had again to tax his imaginative powers for some new method, and the idea struck him that the introduction of the point of a pen-knife into the scrotum, and afterwards some blunt instrument to titilate the testicle (*pour chatouiller les testicules*), might answer the purpose for a considerable period. This method, repeated at stated intervals, succeeded; but lately larger incisions were required to effect that which lesser ones had accomplished before. Early in the morning of his admission, he was induced to make a larger incision than usual; and this led to the condition I first saw him in. He also stated, that the wound was made while in a standing position, a circumstance he appeared much to regret, as on former occasions he had inflicted others almost as large when in bed, and which a day or two's nursing had been sufficient to heal. "*C'était pour mes petits plaisirs*," was his first answer to the expressions of horror and disgust applied to him, after the narration of his beastly propensities.

Enile C— is this patient's name. He is thirty-four years old, and is a gardener by trade. In conversation he expresses himself quite as well as persons in his sphere of life, and much better than many.

I have omitted to mention, that the entire scrotum is completely filled with scars of different lengths.

ST. MARY'S HOSPITAL.

Cleft of the Hard and Soft Palate in a Boy, successfully closed.

(Under the care of Mr. HAYNES WALTON.)

THIS distressing malformation is gradually passing out of the hands of the mere mechanist, who endeavours to fill the breach by obturators or stoppers of different materials, into those of the modern scientific surgeon, who more successfully applies science and art. There is no more beautiful application of the rules of plastic surgery than here, and none where it is more useful. But the highest manual dexterity and manipulation are needed. Indeed the operation of staphyrophary can hardly be expected to succeed, ex-

cept done by a surgeon accustomed to the practical execution of his profession.

A youth was brought into the theatre of St. Mary's Hospital to be operated on, and Mr. Walton very judiciously, before commencing, allowed those who were within seeing distance to examine the throat. The cleft commenced just behind the centre of the roof of the mouth, and passed through the hard and the soft palate to the top of the uvula, the merest portion of which remained undivided, and formed a transverse band between the sides, which were much separated. Mr. Walton mentioned to the class his determination to treat the soft palate only at first, and subsequently to attend to the remaining portion of the fissure; also, that he would endeavour to save the tag at the end of the uvula, as he regarded the connexion, although slight, to be valuable. The patient was just fifteen years old—one of the youngest we have seen operated on; yet his resolution was astonishing, for he scarcely flinched. The ordinary operation of Mr. Ferguson was performed.

In some after remarks, Mr. Walton alluded to the more than ordinary difficulty experienced in dividing effectually the *levator palati muscles*, because of the curtain on each side being held together, and to the greater care required to pare the lower edges of the fissure in endeavouring not to cut through the slight connexion of the uvula. He expressed his faith in the advantage of doing but little at a time, believing it far better, according to the circumstances of the case, to make two, three, or even more operations, than to attempt to affect a great deal at once; sloughing of the edges, or even non-union, being the common result of over operating. He begged to draw attention to the manner in which he had applied the last suture. Having put in a certain number after the peculiar method demanded, when the edges are yet apart, he thought that another was wanted, and with the tenaculum needle he passed it continuously through to the side of the palate, without any difficulty, although he had been led to regard such execution as unpracticable, and undertook it with doubt.

The operation was performed on Wednesday, the 10th of May, at two o'clock; and on Friday, at the same hour, all the sutures were removed. It is a theory of Mr. Walton's, that sutures are generally kept in too long after all operations. He generally removes them by degrees, from day to day. Here, when he took out one, intending to withdraw it, he found the wound so well united that he freed it from all.

Complete success followed this first essay. A fortnight after, on the 24th of the month, the remaining portion of the cleft, including a part of the soft palate, was operated on. Much time and care were given to separate the numerous membranes around from the palatine arch without unnecessarily injuring it, and at the same time not to detach more than was actually needed. On this occasion the sutures were removed equally easy, and union was as effectual. The lad

left the hospital in the next week, already a little improved in speech, and altogether freed from the other inconvenience often experienced while eating or drinking.

WESTMINSTER HOSPITAL.

Dislocation of the Head, and Compound Fracture of the Shaft, of the Humerus above the Elbow-Joint, followed by Mortification; Amputation at the Shoulder-Joint; Death.

(Under the care of Mr. HOLTHOUSE.)

IN compound fractures, the question of amputation is of course decided upon according to the extent of the injury sustained, and the estimate formed of the restorative powers of the patient. In the following case, there was a double injury to deal with—a dislocation of the head of the humerus into the axilla, and a compound fracture of the same bone near the elbow, and implicating the joint. These were fully considered, and as everything was otherwise apparently favourable, it was deemed prudent to reduce the dislocation, which was done, and to put up the arm in an angular splint. On the fourth day, gangrene commenced all around the elbow-joint; but as the inflammation was not spreading, removal of the limb was deferred. On the seventh day the mortification had not only spread but the man was very low, and amputation of the limb at the shoulder was accomplished, to afford a chance of life, but the result was a fatal one. We are advocates to the fullest extent for conservative measures in all cases holding out a chance of success, but in the following, with a compound fracture into a joint, with inflammation existing all around it, and the almost certainty of its spreading, taken with the condition of his arm on admission, we think that amputation would have afforded a better chance for life if it had been done when this sphacelated condition first made its appearance. The mortification was local in its being caused by the compound fracture, and this is laid down by many high authorities as a reason for not waiting for a line of demarcation to be formed, when the gangrene was spreading, which it was not when first seen. The case is one of extreme interest, and contains some points of value in estimating the question of removal of the limb under the circumstances which are detailed.

James P—, aged forty-nine, omnibus driver, of temperate habits, while driving was run into by a cab, and thrown from the box, the wheel of the omnibus passing over the right arm; was admitted May 31st, at nine P.M., about twenty minutes after the accident. The head of the humerus was dislocated into the axilla, and there was a compound fracture of the same bone just above the elbow-joint. A wound existed at the outer side, from which considerable venous hæmorrhage was taking place; and on putting the finger into this, at about an inch and a quarter from the surface, bare bone was felt. Another wound of a more superficial character existed on the inner side of the joint. The soft parts around were bruised and discoloured and felt puffy. The tem-

perature of the hand and of the whole limb was natural, but no pulse could be felt at the wrist. When seen by Mr. Holthouse, an hour after his admission, the whole of the arm was somewhat swollen, had a brawny feel, but was not discoloured; the skin about and immediately above and below the elbow was ecchymosed, and had a soft, puffy feel; and venous blood was running freely from the wound on the outer side of the elbow. Though no pulse could be felt at the wrist, the hand and the whole limb was warm. The dislocation had been reduced, and the limb placed on an angular splint, and bandaged to near the elbow. A compress dipped in alum lotion was applied to the wound.

June 4th.—The lower part of the arm and upper portion of the forearm is in a state of commencing sphacelus, having a decidedly gangrenous odour. The cuticle has become detached in some parts, and in others is raised from the cutis by a bloody-coloured serum. Emphysematous crepitus is also felt in these parts, which are insensible to touch. Pulse was felt indistinctly yesterday by the house-surgeon (1), but none can now be felt, though the bandages somewhat impede the attempt. The hand and arm are warm, and have so continued from the commencement. Slept well last night, from an opiate, and continues drowsy at present. Pulse 94, full and strong; tongue a little dry in the centre; bowels acted the day before yesterday, but not since. To have an effervescing draught, a bread poultice to the arm, and the anodyne repeated. He was seen by Mr. Holt between one and two, and on the report that the mortification was spreading, considered that the arm had "better come off;" but on again examining the injured parts in company with Mr. Holthouse, and learning from him that the gangrene was *not* spreading, it was agreed that amputation should not be resorted to. A pencil of caustic was run along the margin of the inflamed skin by Mr. Holthouse, to mark the limits of the inflammation.

5th.—There is now a breadth of three inches of sound, healthy-looking skin, between the line made by the caustic and the mortified parts, and the patient is in a satisfactory state. The pupils are somewhat contracted, and he is drowsy, as if still under the influence of a morphia draught which was given him last night. Pulse 94, not wanting in power. To continue the mixture; brandy, six ounces, as occasion requires.

6th, Half-past one P.M.—Much worse; in a half-comatose state, and seemingly scarcely conscious when roused. Pulse 116, more feeble. Inflammation has attacked the arm above the parts sphacelated, and extended to the upper part of the shoulder, towards which the gangrene is extending, especially behind the limb and on its outer side. The sister reports that this change for the worse took place last night between eight and ten o'clock, when he became exceedingly restless, complained of great pain in the part, and tore off the poultices. An anodyne being afterwards given by the clinical assistant, he became quieter.—Three P.M.: Although the man seemed moribund,

it was decided in consultation with Drs. Bird, Radcliffe, and Reynolds, who were the only officers in the hospital at the time, that, as amputation might give him a chance, it should be done. Accordingly the limb was removed by Mr. Holthouse at the shoulder-joint, with comparatively little hæmorrhage, none apparently from the axillary artery. The flaps were necessarily short. About four ounces of brandy were given during and immediately after the operation, and no chloroform. One suture only was applied, lest hæmorrhage should supervene, and no dressing but wet lint. Pulse about 130, feeble; respiration gasping.—Eight p.m.: Has rallied somewhat; more conscious; pulse less feeble, and responds to stimulants—after a draught of ginger-beer and brandy only 108. The edges of the flaps were brought nearer together, and retained so by lint and strapping.

7th.—Continued in a satisfactory state until three a.m., when his pulse became more frequent and feeble. Hiccough was brought on after each imbibition of the brandy, and his urine passed away unconsciously. A draught of twenty minims of sedative solution of opium in an ounce of camphor mixture was given him at eleven o'clock last night, and he took about twenty ounces of brandy, with eggs and ginger-beer, but sank this morning at ten minutes past ten a.m.

An examination of the limb detected no cause for the want of pulsation in the radial artery. The humerus was fractured into the elbow-joint, the fracture extending obliquely downwards, from an inch and a half above the outer condyle to the centre of the articulation, separating the articulation of the radius from that of the ulna. A small fragment of bone was also detached from the outer part of the olecranon process of the ulna. The extremity of the inner condyle was dark-coloured and necrosed. In addition to these effects of the recent accident, the lower end of the humerus bore marks of a previous oblique fracture immediately above the condyles: this his wife stated took place two years ago.

Clinical Records.

TWENTY CALCULI IN ONE BLADDER.

A VERY interesting case of stone was submitted to Allarton's operation by Mr. Cock, at Guy's Hospital, on the 16th of June, which was very nearly proving fatal from loss of blood, the great depression being supposed at one moment to depend upon the chloroform. The patient was a pale, worn-out looking man, twenty-four years of age, who had been under one of the physicians at Guy's Hospital two years before with some kidney affection. In March, 1856, Mr. Cock sounded him for stone, but detected none at that time. Latterly there was no difficulty in the matter, as he was passing small calculi from the bladder, and about half a pint of pus daily, with constant dribbling of urine. Moreover, a stone could be

felt through the perinæum, and through the rectum, in a sort of pouch at the neck of the bladder. When the operation in the median line was performed, Mr. Cock removed a number of calculi with his fingers alone, without the aid of the forceps, and taken altogether they numbered about twenty. One of these was the size of a pigeon's egg, but irregular in shape, with a number of facets upon its surface; the others varied in size, some being as small as grains of rice. There was a good deal of hæmorrhage—more than a pint, which reduced the patient very much, he became pale and faint, so that at one time he was almost gone. This was supposed to be due to the chloroform. It may, of course, have caused much depression, conjointly with the effects of loss of blood. He, however, after a little while, under the use of stimulants, such as wine, ammonia to the nose, &c., revived, and was removed to the ward. He was very low and weak for a few days, but made a good recovery, notwithstanding the unfavorable condition he was in at the time of the operation. One of the supposed advantages of Allarton's operation is, as we have heard Mr. Cock say, the saving the blood of the patient. There is no difficulty in opening the prostate, but there is in getting the stone out afterwards. In a stone of a small size it is easy enough. We saw him perform it on a child, on January 27th; also, the week before that, on a boy aged fifteen, the stone having been half in the bladder and half in the prostate for some years. The stones were removed with ease, particularly in the last case. In these and others there was but little bleeding; but in the first-mentioned case it was excessive, and tells much against this form of operation.

AMPUTATION AT THE SHOULDER-JOINT OF A LAD.

WE saw a little boy in the London Hospital in July, who was admitted on the 9th of that month, with his right arm most extensively crushed by a brush-making machine. The bone was fractured almost up to the shoulder in a comminuted form, and the soft parts were greatly injured. The arm was taken off at the joint by Mr. Curling, who had scarcely any material to form flaps. However, we found the lad on the 30th of July almost well; the wounds had healed, and the stump, such as it was, looked very well, considering that but three weeks had elapsed since the injury. The old rule holds good here, that the most surprising recoveries ensue in the young, where the health has been good. This boy looked fat and plump, and nobody would suspect he had sustained any injury or undergone any operation in looking at him. We have noticed that the sufferers from machinery accidents are most generally boys.

CONVALESCENCE IN TWO CASES OF CANCER OF THE BREAST.

THE other day we saw two cases in the wards of St. Bartholomew's Hospital, in which the breast

had been removed for scirrhus by Mr. Coote. Both did well in a short space of time, as we have so frequently seen, showing the advantage of removal under chloroform as compared with the lengthened misery arising from the use of caustics.

One of these patients was a pale, delicate person, of good family, and well brought up, the mother of one child. The following is an outline of her case:—

Esther G—, aged thirty-four, admitted on June 6th, with scirrhus of the left mammary gland. She was ordered meat diet, and a pint of porter daily.

June 8th.—Operation was performed. Ordered eight ounces of brandy, to be given at discretion; she took two ounces in hot water at bedtime.

10th.—Ordered four ounces of brandy daily, soda-water, beef-tea, &c.

13th.—The pulse small; the wound sluggish; perspirations at night. To have half a drachm of liquor of cinchona and twenty minims of aromatic spirit of ammonia thrice a day in water.

20th.—She has had one quart of brandy at intervals since the operation. The pulse has been small but regular; skin cool; tongue clean; bowels regular. Omit the brandy; four ounces of port wine daily; continue the liquor cinchona.

29th.—Ordered a pint of porter daily; four ounces of wine as before.

July 8th.—Discharged well.

We may remark that Mr. Coote adopts the very judicious plan of supporting his patient with stimulants from the time of operating, and, where this is done, excellent recoveries take place. The practice is becoming more general than it used to be.

AMPUTATION OF THE BREAST; HEALED IN A WEEK.

WHAT is the essential difference between the removal of a cancerous breast by the knife and by the application of caustics? So far as the constitutional results are concerned, there is none; but a cancerous breast can be got rid of by means of the knife without any pain or consciousness, under the influence of chloroform, and the wound will have healed up in seven days. We say this without any exaggeration, for we have many times witnessed it.

On the 30th of July we saw a female, aged forty-three, in the London Hospital, who had had a scirrhus breast for a year and a half, especially troublesome since last Christmas. The tumour formed by the disease was not large. It was removed, on the 23rd of July, by Mr. Curling, and on the 30th it was perfectly healed up, and the woman looked well in every respect. If it had been desired to remove this by caustics, it could only have been accomplished at an expense of suffering of weeks', perhaps months' duration, with the system left, most probably, in a very irritable and worn-out condition. The difference, then, between the two modes of extirpation is; that by one, the cancer is removed without the knowledge of the patient, and she is well in a few

days at farthest, without having suffered the least pain; whereas, by the other, from first to last, it is nothing but a constant agony, with the probability, in our opinion, of a more rapid recurrence, from the irritation of the nervous system.

UNUNITED FRACTURE OF THE TIBIA.

THIS was the case of a boy who fractured his left tibia at its lower third, about four years ago, in the country. He was seen by a surgeon, who looked upon it as a sort of bruise, kept him quiet for a little while, and then allowed him to go about. The consequence was that a false joint formed, with deformity of the leg. Two years ago, Mr. Lawrence applied the seton to the boy's leg, in St. Bartholomew's Hospital, without any benefit; and after that he was under Mr. Tappin's care at the Royal Orthopædic Hospital, where he was treated by mechanical appliances which restored the limb to its straight position. He, however, became as bad as ever, living as a poor parish boy, and his friends were anxious to have his foot taken off, for he was a great incumbrance and charge upon them in his present condition. On the 20th of June, it was accordingly amputated by Mr. Lawrence. From the nature of the case, more especially in its long standing, we doubt whether any measure except that adopted would have been of service. Sawing off the ends of the bones would hardly have answered here. We intend shortly to give, in our "Mirror," a case under Mr. Thomas Wakley's care, at the Royal Free Hospital, wherein this proceeding was to a certain extent successful.

HARE-LIP IN AN ADULT.

CERTAIN affections in certain stages are getting less common year by year. A very large tumour is now a curiosity, because such morbid growths that should be removed are so treated early. Thanks to chloroform and the onward march of surgical education, a hare-lip in an adult is certainly very rare in this country. One was operated on by Mr. Haynes Walton, at St. Mary's Hospital, during the previous month, and about which we will say a few words. The man was forty years of age. The lip only was involved, but it was cleft in its entire depth, the fissure passing into the nostril. There was a very considerable separation of parts when the facial muscles were moved, and several teeth were exposed when they were quiescent, but Mr. Walton considered that this was inseparable from the affection in the full-grown face, where the many muscles that act on the angle of the mouth are fully developed, and he spoke of the deformity as being very favourable for operation. The position he selected for its execution was perhaps that most adapted for all the desired purposes. He sat at the edge of the operating-table, placed the patient on a stool before him, and secured his head, which was thrown well back, between his knees. The entire opera-

tion was done with a small, narrow scalpel—the kind of instrument that Mr. Walton always uses for this and similar proceedings. The lip on each side was transfixed, and pared from above downwards, and the free edge of the tissue taken off in one continuous piece. Mr. Walton lays much stress on the surfaces being cut in a curve, so that when they are brought together the line of the mouth is maintained. Without this, there is apt to be a retiring angle. Moreover, he detaches the surfaces on each side freely from the maxillary bones, to prevent any straining on the pins and sutures. He inwardly adjusts the edges from below upwards, on account of the greater accuracy that this commands. He begins, as a rule, to remove the fastenings about forty-eight hours after, a pin is taken out, next day, an upper suture, on the fourth day another pin or suture, and so each day, till all are taken away. Plasters are generally employed from the commencement of this process. We saw this patient a week after the operation was done, and found the parts perfectly united, without any trace of deformity. The operation had been most successful. The advantages of early operation in hare-lip are now so well known, that it is really an uncommon thing at the present day to see adults with the deformity, and when we do, they turn out to be country people.

ACUTE PHAGEDÆNA OF THE PREPUCE AND GLANS PENIS, TREATED SUCCESSFULLY.

ACUTE phagedæna, from the rapidity of its progress, sometimes gives great cause for uneasiness, and requires active treatment. We referred on a previous occasion to the fatal results of this diseased action which recently happened to several patients in the foul wards of St. Bartholomew's Hospital. A short time back we noticed a case in the Royal Free Hospital, under Mr. de Méric's care, of a baker, seventeen years old, who six days before admission was seized with sudden pain and smarting at the end of the urethra, followed by swelling and tenderness of the glans, which extended to the entire organ. He had been treated by a surgeon, but it appears no attempt was made to relieve the phagedænic condition which must have existed at the time, and which soon after led to hæmorrhage to the extent of half a pint or more. When admitted, the front portion of the prepuce was in a state of dry gangrene for two inches from the orifice; the remainder of the penis was dry, shiny, infiltrated and œdematous, giving rise to a sickly gangrenous odour, depending upon an oozing and gaseous fluid. There was considerable febrile excitement, and constitutional disturbance as well, but no pain. He had not had any previous venereal affection, but each groin contained a chain of enlarged glands. Soothing applications were at first used, with opium, wine, &c., internally. When seen by Mr. de Méric, the upper surface of the prepuce was black and sodden, and strangulation was clearly defined by examination

with a probe. This was relieved by free division of the prepuce on a director; the sphacelated portion was removed, together with a flap of the posterior part, which was pendulous. Strong nitric acid was freely applied to the edges and irregular jagged depressions; cold was also applied, and opium, wine, &c., continued. This had the effect of completely arresting the sloughing phagedæna, the diminished glans assumed a good colour, and commenced to granulate and cicatrize, and in the course of three weeks or so the organ was healed, much diminished in size, but quite symmetrical in form. We have gleaned the above abstract from notes taken by Mr. Curran, house-surgeon to the hospital.

DIVISION OF CONTRACTION OF THE NECK FROM A BURN.

A GIRL, aged twelve years, was admitted into Charing-cross Hospital on the 19th of May, 1857, under the care of Mr. Hancock, who, two years ago, operated upon her for contraction of the neck after a burn. At that time she presented the following appearances:—Her lower jaw was attached by a firm cicatrix to the first bone of the sternum, her front teeth being everted; and strong bands extended from the sides of the jaw to the clavicles, obliterating the front of the neck. Mr. Hancock cut through these bands about half an inch above the clavicles; he next detached the sternal and a portion of the sterno-cleido mastoid muscles on either side of the neck, which, upon raising the lower jaw and throwing the head back, left a wound about seven inches long by four inches wide. He then dissected a flap of rather larger dimensions from the left shoulder and upper arm, and turning it across the throat, applied it to the afore-described wound, and fixed it by sutures. The whole of the flap adhered by first intention, excepting at its extremity where it joined the skin on the right side of the throat: it here sloughed for an extent of about three quarters of an inch, which had to be healed by granulation, resulting in a firm band of cicatrix about a quarter of an inch thick, but extending from the right side of the chin to the clavicle, and sufficient to interfere materially with the child's comfort, although in every other respect the operation had succeeded perfectly, the throat being restored, and the lower jaw resuming its natural shape.

On the 6th of June Mr. Hancock divided this band, bringing the old skin together at the bottom of the wound by a simple suture. This had the desired effect, and the patient progressed most favourably.

REMAINS OF AN OLD STRUMOUS ABSCESS.

THIS was evidently a case of old strumous abscess in the right side of the neck, just below the angle of the jaw, in a girl who came up from the country, and who was admitted into King's College Hospital. It had been opened by a sur-

geon, and had closed, a partial tumour, as it were, still remaining. There were one or two fistulous openings, which discharged matter; these were slit up by Mr. Fergusson on the 11th of July, with a probe-pointed bistoury, and the greater portion of the cyst of the abscess was removed. This was partly under the sterno-mastoid muscle, near its origin, and all the glandular tissue was gone from it, as if it had been a suppurating gland. The bottom of the front part of the mastoid and styloid processes could be easily touched in this situation, so that, if the tumour had been solid, it would have been dangerous to interfere with it.

GENUINE MAMMARY CANCER.

If the student will avail himself of the opportunities which present themselves for studying typical examples of disease—say cancer, for example—he will have abundant scope for becoming familiar with its ordinary appearances. We have called attention to this many times. On the 25th of June, Mr. Critchett, at the London Hospital, removed the right breast of a young woman which was affected with cancer, which projected outwardly in the form of a tubercle. It did not involve the whole of the gland, but extended to its base; and on section presented the peculiar greyish-yellow appearance so characteristic of this growth. Looking at this breast, one would have supposed the disease confined entirely to the circumscribed portion affected. It turned out otherwise, for some of the neighbouring axillary glands were infiltrated, and required removal. This case has gone on well since the operation.

A somewhat similar example was removed by Mr. Partridge, at King's College Hospital, on the 27th of June, and another the week before, both of which are doing well. Mr. Partridge observed that a third case, in an ulcerated state, was being treated by chloride of zinc, according to the formula of the Middlesex Hospital. He said it was a most painful and tedious process, yet still it cleaned the sore.

MOLES, WARTS, AND NÆVI.

ALTHOUGH the patient (who was in St. George's Hospital) was an infant, he had a complication of maladies, which fortunately were on the external surface of the body. Thus large mother's marks, of a yellowish and a light-brown colour were present on the forehead, the belly, and navel, and the back of the left thigh, running in lines on the last-mentioned part. The peculiarity of these marks was that they ran down the centre of the body like a raphé, even to the penis, forming warts along their course. The discoloration in other parts partook of the character of moles. A nævus situated on the left temple was strangulated by Mr. Hewett on the 18th of June, who passed a pin through its base and another at right angles to it, and tying the ligature beneath the pins. It was but the other day that we saw

a case somewhat similar to this, but on a more extensive scale, at King's College Hospital, under the care of Mr. Fergusson, possessing the same mixed characters, the brief particulars of which we have given on a previous occasion. Rare cases like these seldom occur at the same time.

OSTEO-SARCOMA MISTAKEN FOR MYELOID DISEASE.

EXTERNALLY the tumour in this case seemed to be a large medullary cancer, extending over the whole area of the ham and calf of the left leg of a boy, aged about sixteen years, at Guy's Hospital. It was fully the size of a cocoa-nut, and had been growing only six months from the outer part of the leg, beginning in the fibula, and lately extending somewhat rapidly. There was no assignable cause for its appearance. It appeared he had been a patient in this hospital before, went out, and had been treated by some "clever female well versed in dispersing tumours," who applied an unguent, which actually caused it to grow twice its size in the course of a short time. He returned to Guy's Hospital on the 13th May, and on the 19th we saw Mr. Cock remove the leg above the knee, under the influence of chloroform. The boy looked very pale and delicate, but has made an excellent recovery. We were anxious to know the true nature of the tumour, which was exhibited at the Pathological Society on the evening of the day of its removal as a myeloid tumour, as myeloid cells were found in it. It appeared to be composed of a large mass of bone, an expansion of the head of the fibula, which had pressed on the tibia, with an apparent deposit of bone. Since that time it has been found to be a well-marked example of osteo-sarcoma, as told us on the 1st July by Mr. Daniel, the house-surgeon.

SYPHILITIC ULCER OF THE LOWER LIP.

SUPERFICIAL observation, without an investigation into the history, would almost lead to the belief that this was a case of cancer, from the presence of an excavated ulcer engaging the mesial line towards the right side of the lower lip. The patient was a female, aged thirty, whom we saw at the Royal Free Hospital on the 23rd June, under Mr. Cooke's care. Seven weeks ago a small pimple appeared on the lip, which she supposed to depend upon cold; it got very bad—that is, an ulcer followed, which became enlarged with hard edges; this was followed by sore-throat two weeks after, and about ten days ago a few isolated papules appeared on the chest and arms. On looking at the throat, it is seen of a purple redness, with a deep ulcer on the anterior part of the right tonsil. Mr. Cooke took the correct view of the case, and is treating it as syphilis, giving pills of protiodide of mercury, with black wash to the sore on the lip, which is assuming a healthy appearance, with a disposition to heal up. On questioning the woman most particularly whether she had ever contracted anything, she stoutly denied it.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

SIR. C. LOOOCK, BART., PRESIDENT, IN THE CHAIR.

ILLUSTRATIONS OF AGUISH DISORDER PREVALENT IN LONDON DURING THE LAST TWO OR THREE YEARS. By C. HANDFIELD JONES, M.D. (*Communicated by Spencer Smith, Esq.*)

THE author, while expressing a doubt whether the cases selected presented any very striking points, was of opinion that the series was not without value as illustrating a frequent character of disease; and he hoped that their consideration might shed some light on various morbid phenomena of common occurrence, yet but imperfectly understood, and often misinterpreted, and so might render their treatment more rational and satisfactory. He wished the cases to be regarded as experiments in which the nature of the morbid action was to some extent inferred from the mode in which it was affected by remedial agents. He did not consider the evidence demonstrative; he only claimed for it that the inferences should be regarded as highly probable. Information of this kind, though very imperfect, may, after all, be of far more use than the most exact determinations of the balance and the microscope.

He premised the following statements:—

1. That local heat, congestion, and sometimes inflammation, may be produced by paralysis of the vaso-motor (sympathetic) nerves of a part.

2. That the phenomena of fever can be well accounted for on the view of paralysis of the sympathetic system.

3. That there is good reason to believe that neuralgia and dysentery may be the exponents of malarious influence as much as a true ague or remittent.

4. That there is much cause for believing that the vicinity of canals is unhealthy, and that they generate a poison producing effects like those of malaria.

5. That the evidence respecting the production of malaria is such as makes it impossible to affirm that it may not be generated by any moist surface in the process of drying.

6. That in cases of obscure and refractory character the reaction of the system towards remedies, and the effect of change of air, may afford most material aid towards forming a correct idea of the cause and nature of the disease.

7. The term malarious disorder, as used by the author, is not intended to assert that the essential cause is always identical with marsh miasma, but to convey the idea of a disorder which, however produced, is exceedingly similar to intermittent and remittent fever in many respects, maintaining the same pathological affinities, operating on the same (nervous) system, and requiring the same treatment.

8. The primary action of fever poison, most

notably of malarious fever, in paralyzing and depressing affections, especially the nervous system. The most deadly fevers are the algide, in which reaction never occurs; the phenomena usually called febrile are, if the excitement be not over great, a desirable indication that the system rallies, and resists the morbid influence. Hence, if when there is no intense malaria, a patient suffer from continual, exceeding, causeless (apparently) depression and debility, occasional chills and flushes, or perspirations, with an interlude of neuralgia at times, or a dysenteric or rheumatic attack, and if benefited materially by quinine, iron, &c., and most of all by change to a healthy locality, the inference that he laboured under some aguish disorder seems legitimate. The system is habituated to the morbid action, and does not react strongly against it.

9. The tendency to relapse is most difficult to eradicate. Any cause of a debilitating kind will almost surely reproduce the morbid action in some form or other.

He then gave the details of the following 21 cases:—

1. Obscure aguish disorder.
 2. Rheumatic nasal inflammation.
 3. Cerebral attack; epistaxis. Benefit from quinine.
 4. Cerebral attack; failure of cerebral power. Benefit from ferro-citrate of quinine.
 5. Vomiting, febricitation, head-pain, exposure to ague poison. Cure by quinine and strychnia.
 6. Cerebral attack; canal influence.
 7. Scrofulous, epileptoid seizures. Cure by ferro-citrate of quinine and nux vomica.
 8. Hemiplegia in a neuralgic subject. General tonic treatment; recovery.
 9. Hemiplegia, first of right, afterwards of left side; canal influence.
 10. Rheumatism of the œsophagus; canal influence.
 11. Rheumatism, thoracic neuralgia; depression; canal influence.
 12. Cardiac neuralgia paralytica; slight hæmatemesis. Cure by quinine and iron.
 13. Rheumatoid intra-thoracic neuralgia.
 14. Severe cardiac neuralgia; aguish attacks.
 15. Periodic gastralgia. Cure by quinine and iron.
 16. Rheumatic abdominal neuralgia.
 17. Febrile affection; lingual neuralgia. Cure by quinine and iron.
 18. Dysentery and aguish disorder. Cure by quinine and opium.
 19. Dysentery; rheumatism. Crimean origin.
 20. Nervous prostration; hæmorrhage from stomach. Benefit from change of air, cinchona, and strychnine.
 21. Fugitive œdema recurring frequently in various parts. Cure by sustained tonic treatment.
- The author then proceeded to cite ten instances in which more decided ague was originated or developed by a residence in London. In conclusion, he drew the following deductions:—

1. There seems much reason to think that an obscure form of aguish disorder prevails in (at least) the western parts of London; the phenomena being great debility, hyperæsthesia, failure of cerebral power, neuralgia of external or internal parts, gastric disorders, rheumatic affections, and ill-developed febrile paroxysms. Quasi-apoplectic seizures are not uncommon.

2. Quinine, iron, and strychnine, are found of decided benefit, with a generous diet.

3. Change to a pure air is the best remedy.

It must be apparent that, if there be any truth in the foregoing views, those who ignore them entirely must practise at great disadvantage, and meet with continual disappointment. The opinions advanced in the paper are mainly derived from Dr. Macculloch's writings, whose opinions are strongly corroborated by Dr. Copland.

A short discussion followed, in which Dr. Webster, Mr. Squibb, Dr. Stewart, Dr. Smith, Dr. Theophilus Thompson, Mr. Radcliffe, Mr. Spencer Smith, and Dr. O'Connor took part.

On a Case of Hysterical Tetanus.

By EDWARD FURLEY, Esq., F.R.C.S. (*Communicated by Dr. Burrows.*)

THE subject of this communication was one in which symptoms of what appeared to be, in the first instance, aggravated hysteria, were ultimately associated with others more distinctly tetanic. As a child, she had at two years of age an attack which was supposed to be encephalitis. At seven she had severe scarlatina, followed by discharge from both ears. She grew up a delicate girl; menstruation appeared at twelve; and at this time nervous symptoms began to show themselves. At the age of sixteen her more serious illness began, after severe mental shock, with pains in the pelvic region of spasmodic character; in consequence of which she would jump out of bed, and run about the room screaming violently. There were various anomalous symptoms observed in succession, in which she seemed to undergo much suffering, and her screams were occasionally such as to alarm the neighbours. During the last few months she had fits, apparently of a cataleptic character, with insensibility, but unaccompanied by delirium or coma. It was at this period more particularly that the tetanic spasms were seen, commencing in the legs, and assuming more or less the characters both of emprosthanus and opisthotanus. She died exhausted at the age of eighteen years.

Post-mortem examination.—Emaciation extreme. Cranium large and thin; arachnoid opaque; a good deal of subarachnoid fluid. Brain large; lateral ventricles each containing about half an ounce of serum; substance normal. Spinal cord was firm and natural in every portion; arachnoid opaque. The heart was small but healthy; slight pleural adhesions at the upper part of the chest, and firm consolidation of one portion of the right lung. A pouch-like dilatation of the duodenum existed at its lower portion;

in other respects all the abdominal viscera were healthy. The uterus was small, but showed no indication whatever of disease.

PATHOLOGICAL SOCIETY OF LONDON.

DR. WATSON, PRESIDENT, IN THE CHAIR.

MR. JABEZ HOGG read a report of a case of
CYSTIC DISEASE OF THE LIVER.

F. S. A—, aged forty-five, of fair complexion, nervous temperament, and health not very robust, while in the country, on September 12th, 1846, caught a cold, which was ushered in with violent pain across the epigastric region. A medical practitioner being called in, he prescribed, but at the same time advised him to return home, as from the symptoms he considered the patient was suffering from an attack of icterus-hepaticus. On his arrival, I found him suffering much pain without vomiting; but a slight yellow tinge being perceptible over the skin, I concluded that gall-stones were obstructing the duct. The next day the skin deepened in colour, the fæces were colourless, and the urine was of a very deep saffron hue. All these symptoms gradually yielded to the remedies employed; and in about four weeks he was sufficiently well to go to the country again. On the 9th of February, 1857, the former symptoms presented themselves, but not with equal severity, and more readily yielding to the remedies administered, he was enabled in about a fortnight to resume his ordinary occupation. A good deal of debility, and a loss of appetite, followed this attack. I, therefore, recommended country air once more; but the weather proving unfavourable, he could not be prevailed on to remain away more than eight days, and journeying home caught cold. I was summoned to attend him on the 25th of March, and found him labouring under sickness, accompanied with considerable pain, which I apprehended was a precursor of another attack of the former disease. On the second day, the skin was of a deep yellow colour, the urine loaded with bile, and stools nearly white. Upon making an examination over the seat of the pain, I found on percussion considerable dullness below the false ribs; some convexity, and a hardened condition of the liver, great prostration of strength, without any abatement of the symptoms, induced me at the end of the week to recommend a second opinion on his case. There was, from time to time, considerable variation in the completeness of the biliary obstruction; for although the urine was always full of bile, and the stain of the skin deep, there was often some bile in the motions, especially after a purgative. We inferred, therefore, that the source of biliary obstruction, though persistent, was not complete. He complained, for a few days, of pain, or, rather, a sense of uneasiness over the liver, which was increased by pressure; but this subsided, whilst the extent of the dullness increased. At this time a slight undue visibleness of the superficial veins of the epigastric region was first

noticed, which showed that the source of the jaundice was exercising pressure on the inferior cava. The right hypochondriac and the epigastric regions were now complete, the dulness extending from the level of the nipple and lower part of the sternum to near the umbilicus, and a parallel line extending to the right.

The course of the symptoms from this period was as follows: Increasing conspicuousness of the superficial veins; cedema beginning at the feet, and extending up the thighs, scrotum, loins, and abdominal parietes, so intense at last as to render the patient quite helpless, constituting the principal source of suffering, and which with occasional rigors greatly exhausted him. Just towards the last, the hardness of the dull region below the margin of the right false ribs was exchanged for a sense of fluid, there being a circumscribed fluctuation, and the finger, when pushed forcibly, meeting at first with a fluctuous and soft yielding, and then striking something hard, giving the idea of a harder tumour below, covered with a stratum of fluid, and this the post-mortem showed to be the fact. Two days before death fluid was detected in the peritoneal cavity, but only in very small quantity. It was somewhat remarkable that there should have been throughout the case, at least with the exception of the first two or three days, an absence of pain, tenderness, and vomiting, or any derangement of digestion, and until the last of ascites. The condition that all the signs pointed to was enormous enlargement of liver, biliary obstruction, and pressure on the inferior cava, but no pressure on the portal vein or alimentary canal. He was taking a full amount of nourishment up to the time of his death, which was preceded by a severe and very distressing attack of dyspnoea on the 30th of April. This lasted up to within an hour of his death, when he became perfectly calm, dying soon after twelve the same night, retaining to the last full possession of his faculties.

Post-mortem Examination.—On opening the body fourteen hours after death, about a gallon of deeply-coloured yellow fluid escaped; the liver was then seen to occupy the whole epigastric and right hypochondriac region. The transverse colon lying across the umbilical enormously distended, explaining the resonant prominence in that situation during life. The heart and lungs were completely pushed up out of place, and looked very small, the pericardium being deeply stained with bile. The convex surface of the liver was very mottled and irregular, and was firmly adherent to the diaphragm, which offered some impediment to its removal. When placed in the scales, it weighed eight pounds and a half. The right lobe was occupied by a largely-distended hydatid cyst, from which flowed, on cutting into it, a quantity of a peculiarly gelatinous material of a pale-amber colour, the consistence of thick gruel, and having a very offensive odour. This was followed by a more opaque and fluid matter, which looked like, and proved to be, pus. This discharge left a large cavity, of which the small

amount of liver structure that remained formed the shell. The matter thus liberated, when examined under the microscope, gave an abundance of hydatid walls of all sizes, from the one-tenth to the one-hundredth of an inch, with here and there echinococci and their hooklets, some needle-shaped crystals, fatty matters and cholestrine, with epithelium scales. The cyst had completely obliterated the gall-duct, and in the gall-bladder four gall-stones were found, with some colourless fluid made up of cylindrical epithelium, most of which was inclosed in structureless spherical globules. The left lobe of the liver was much changed in its character, being a softened mass filled up with inspissated bile. The heart was small, readily breaking down under the finger, and was in a state of fatty degeneration. The kidneys were, as might have been anticipated, much congested, and the whole of the viscera and tissues more or less stained with biliary colouring matter. (The specimen was exhibited.)

Reviews and Notices of Books.

Notes on Belgian Lunatic Asylums; including the Insane Colony at Gheel. By JOHN WATSON, M.D., F.R.S., &c. pp. 68.

SHOULD Dr. Webster not be enjoying a holiday tour amongst the tombs, deciphering the ages thereon recorded, he is sure to be found either visiting prisons or perambulating asylums for the insane. This latter occupation seems to have engaged the author during last autumn; the present brochure is a description of his tour. After attending to the lunacy laws, and regulations affecting asylums, in Belgium, some of the chief institutions of that country are described, but especially the unique insane colony of Gheel, hitherto but little known in foreign lands, and never before described by any English physician. On that account alone, irrespective of other considerations, the writer's communication deserves more than some casual notice.

The origin of the great reputation of Gheel as a refuge for lunatics dates so early as the sixth century, when a pagan king killed his daughter, Dymrna, who had been converted to Christianity. This savage deed produced such an impression upon some lunatic spectators of the murder, that they became cured; whereupon the cry of "a miracle! a miracle!" was raised by wondering bystanders; and thus Dymrna—saint and virgin—became ever after the patron of all mad persons.

When inspected last September, Gheel contained 774 lunatics, distributed in nearly 500 different dwellings; of whom about 300 were in neighbouring villages or cottages, the rest being in houses in the town just named. Speaking generally, the sexes are lodged separately, although sometimes an aged man resides along with an insane old woman, in the same family; whilst boisterous, idle, or agitated maniacs are placed in remotely-situated habitations on the open heaths, where they often become tranquil,

from having nothing but silence and solitude around; and thus, living away from all neighbours, they cannot create much annoyance. Within the town, having 4,000 inhabitants, usually 230 lunatics are placed, thus giving nearly one insane to seventeen sane persons; whereas in country districts the proportion ranges at one lunatic to about every nine ordinary residents. Alluding to these rural dwellings, Dr. Webster says some of the demented residents were superintending cows, others churning, labouring in the barn, cooking food, cleansing the house, or rocking the cradle; and hence employed much in the same way as they might have been at home or out at service. Being, thus, much in the open air, the patients breathed a purer and more salubrious atmosphere than most inmates usually enjoy in modern asylums, and which proved often highly beneficial.

Within the brief space at our command, it becomes impossible to review many topics adverted to by the author in his instructive Notes. However, one quotation, to illustrate a prominent point in the history of Gheel, deserves special observation, viz.—

"The great and truly peculiar feature, which has during now many centuries always characterized this singular colony, ought never to be forgotten, namely, when lunatics everywhere else were too often treated more like so many wild animals than as human beings, and even frequently chained, or lying on straw in dark noisome dungeons, here the sufferers from similar maladies breathed an open, more healthy atmosphere, lived generally quite free, like other members of the family where they resided, and in whose occupations, enjoyments, or even annoyances, they often participated as ordinary inmates. Indeed, many never suffered from bodily coercion, unless under certain circumstances. In fact, *No restraint* appeared the great maxim at Gheel, physical confinement the exception. Whereas, throughout the civilized world generally, restraint—frequently of the most severe description—was formerly almost the invariable rule, bodily freedom being then of exceedingly rare occurrence."

These remarks convey a very correct notion of this most singular locality; and having existed throughout now many centuries, it deserves being better known by modern philanthropists. The present report being the first and only detailed account of Gheel which has yet appeared in the English language, and as Dr. Webster's narrative brings before its readers many curious details respecting so remarkable an insane institution as the one now cursorily noticed, we would observe, before taking leave of the subject, that the author's Notes will amply repay perusal. We would add, for the benefit of such as may feel desirous to know the opinions which foreign writers entertain regarding the lunatic colony of Gheel, its attributes and peculiar capabilities, that they may peruse with advantage Esquirol's brief account, M. Moreau's (de Tours) graphic letters, and lastly, Dr. Biffi's (of Milan) Report of his late Visit to the Asylums of Belgium.

Nevertheless, however much these works deserve being consulted, seeing the publication we have now reviewed is much more minute in de-

tails, enters at greater length into the subject, besides giving some strange historical traditions, yet by many implicitly believed, it becomes in a higher degree interesting. Further, as the brochure contains an account of the present condition of the colony, with a fuller description of its characteristic features than any yet published in England, impartial critics may receive this production with confidence as a good source for obtaining reliable information regarding an establishment still very little known, either by the public in this country, or the medical profession.

Report, Microscopical and Chemical, on the Water of the Serpentine. By ARTHUR HILL HASSALL, M.D., F.R.S.

THE above Report, drawn up at the request of Sir Benjamin Hall, has just been presented to the House of Commons, and ordered to be printed, The Report concludes with the following observations:—

"That these waters, taken from opposite extremities of the Serpentine, are both very bad, containing much organic matter, vegetable and animal, dead, living, and in solution.

"The presence of a large quantity of organic matter is proved alike by the microscopical examinations and the chemical analyses.

"The microscopical analyses show that they both abound in living organic productions, belonging to various divisions of the vegetable and animal kingdoms, as Diatomaceæ, Desmidiæ, Confervæ, Fungi, Entomostracæ, Annelidæ, and Infusoriæ.

"Although by means of chemistry we cannot determine either the state in which the organic matter exists in water, or the forms assumed by it, yet chemistry enables us to arrive at a close approximation to the actual quantity of that matter present in any water; and in the case of the waters of the Serpentine, the chemical analyses made prove that they both contain a large amount of organic matter; to the presence of which the unwholesomeness of most waters is to be assigned.

"The state of sample B (taken from the east end of the Serpentine) was much worse than that of sample A (from the Bayswater end); this was clearly shown, first, by the greater abundance of infusoriæ and other forms of living animal productions contained in it; second, by the presence of a great many examples of the worm or annelid, named *spirostomum ambiguum*, and which, so far as my experience extends, is met with only in waters of a high degree of impurity; and third, by the larger amount of organic matter contained in it, as proved by the chemical analysis.

"Both the waters contained much of the vegetable production, or conferva, *aphanizomenon flos-aquæ*; it was to it that the green hue of these waters was owing, and it is to this plant that the bright green colouration of the waters of the Serpentine, so frequently observed at different times, has been due. That such minute vegetable productions should be capable of vividly colouring such large masses of water is remarkable. It is to a vegetable production of the same class that the colouration of the Red Sea is due.

"The condition of sample B represents, then, very closely, that of the water with which the lake in St. James's Park was formerly supplied; the results therefore, of the present examinations and analyses of the water of the Serpentine prove clearly the necessity which existed for some efficient steps being taken to improve the water-supply of the lake. That the plans now in course of execution in St. James's Park, under the direction of Sir B. Hall, will result in a very greatly improved state of the supply, especially if the lake be filled

with water from the recently formed well, does not admit of a doubt.

"The water of the Serpentine being shown to be full of impurities, it will not be out of place, in connexion with the present report, to consider the steps required to remedy the present highly unsatisfactory condition of the water-supply of the Serpentine.

"From a full consideration of the matter, from a knowledge of the conditions necessary to secure the purity of water, derived from much experience, I am decidedly of opinion that it would be scarcely possible to devise means more efficient for the attainment of the object in view, than those now being carried out in the case of the lake in St. James's Park.

"What, therefore, appears to me to be necessary is, that the Serpentine should be emptied, and all the black and putrid mud, the collection of the impurities of years, removed: that the bottom should be levelled, rendered more shallow, and of one uniform depth of about four feet and a half; that it should be covered with concrete; and lastly, that it should be supplied with pure spring water, arrangements being made with the water companies for a temporary supply of water in the event of the supply from the springs falling short at any time.

"The removal of the black and putrid mud is absolutely essential; for were it suffered to remain, and were the Serpentine filled with the very purest water, it would speedily become contaminated and spoiled by contact with the mud in question.

"The concreting of the bed of the Serpentine is equally essential, for, the water being let off, the bed might then be periodically swept and cleansed, by which alone the water could be kept in the necessary state of purity.

"The levelling and partial filling-up of the bottom of the Serpentine, and its supply with pure water, are to be most strongly advocated, not only on sanitary grounds, but on that of humanity. Not only would bathers resort to the Serpentine in greater numbers and with more advantage to their health, not only would the atmosphere near the water be purer and more healthful, but the lives of hundreds of persons would eventually be saved. The services of that most useful and praiseworthy society, the Royal Humane Society, might, in that case, so far as the St. James's and Hyde Parks are concerned, be dispensed with, and their exertions transferred to other places more in need of their aid."

De la Nature, du Traitement, et des Préservatifs du Choléra. Par Fr. X. POZNANSKI. St. Petersburg, 1866.

THE author of this tract made observations in Russia and Poland during the cholera epidemic of 1848 and subsequent years, in respect of irregularities of pulse in persons of apparently good health. The number he examined was large, about 300, and in many of these persons there was very sensible diminution of the circulation, the pulse not exceeding 60, and in some cases scarcely 45 a minute, indicating a superabundance of blood in the heart and arteries. The disease (he says) chose for attack only those persons who had not combated this symptom by the proper remedies. When bleeding was resorted to as a preventive, he noticed that condition of blood, peculiar to cholera, which Caunstatt and others have observed. From these facts, believing them to be well ascertained, Dr. Poznanski undertakes to solve the cholera problem. It turns on the proportion of the *active force* to the *resistance*.

The vital conditions which determine the centrifugal movement of the blood: the functions of

the heart and other muscles, the elasticity of the arteries, and quantity of blood supplied in a certain time to the vascular system,—these measure the *active force* to each individual, which force meets its *resistance* in the matter which composes and surrounds his organization, in air, water, &c., and chiefly in the capillary vessels and those organs where they are most developed. Physical and dynamical causes contract and expand the bloodvessels, and especially the capillary, and so increase or diminish the power of resistance. The active force in the degree of its increase accelerates the blood, and *tends* to produce *congestions* in parts least provided with capillary vessels, and therefore least resistant, as the peritoneum, &c.; as it decreases in proportion to the resistance, the result is *stagnation* in the resisting organs.

The transudation of serosity through the walls of the arteries is in the measure of the quantity of blood, its liquidity, and the activity of the heart. The elimination of carbonic acid and urea will be in proportion to these conditions.

Stagnation of the blood in the peripheric organs will produce—1, deficiency of blood in these organs and a suspension of functions; 2, a proportional *congestion* of blood in the central organs, and augmentation of their activity; 3, increased transudation of blood through the parietes of the surcharged arteries; 4, coagulation and compact obstructions formed by the solid parts of the blood; 5, deficiency resulting therefrom; and 6, as a consequence, that which the Doctor terms a *secondary stagnation* in the parts that offer less resistance.

Proceeding on these principles, the writer asks what are the changes which an organism submitted to excessive atmospheric pressure would present, and finds that they entirely correspond with the choleraic phenomena. A high pressure will produce a defect of blood in the veins exposed to it, and in the capillary vessels, and a proportional excess in the heart and arteries. The heart distended will contract more slowly, and be resisted more vigorously by the contracted capillaries; the arteries will be saturated, their elasticity and transudation augmented; a pulse, "*elevé, lent et promptement disparaissant*" (*magna, tardus, et celer*); vomiting and purging. Then the circulation will be depressed; all the functions, reproductive, secretory, and respiratory, enfeebled; accumulation of carbonic acid; venous plethora; deficiency of fibrine and serous parts; excess of corpuscles and albuminous parts of the blood. *There will be set up the primary stagnation.* After a time come condensation in the blood; thence diminished capacity, and frequent contractions of the heart; depressed circulation in the central organs—*i.e. the secondary stagnation.* Central obstructions are formed, and produce typhoid symptoms; whilst in the peripheric vessels the blood begins to liquefy, and the circulation to be increased; the pulse is small and frequent: a disagreeable heat, sweat, and other secretions follow. In the preliminary depression

of the circulation, and the primary and secondary stagnations, we trace the three stages of cholera, the predisposition, the algide and the typhoid symptoms.

It appears to Dr. Poznanski, that he has established the identity of the two processes by the following facts:—1, Cholera is endemic in India, Persia, and other countries exposed to high atmospheric pressure; 2, the epidemic has been always preceded and accompanied by excessive pressure, and its intensity proportioned to this excess; 3, cholera chiefly infests low situations, such as the banks of rivers, and in Russia, the low countries on the Caspian; 4, it propagates itself in the direction of low levels; 5, mountain heights afford a refuge from its attacks; 6, the specific weight of the air is increased in periods of cholera, as shown by the observations of Prout; 7, cholera is generally preceded and accompanied by unusual calm, and, on the other hand, is mitigated, if not extinguished, by a storm, condensation of the air being the consequence of the former state, rarefaction of the latter; 8, if there is wind, the disease moves towards the point from which it blows, because the air is more condensed in that direction; if, on the other hand, it were a miasma, as is supposed, it would flow with the current; 9, a general depravation of the blood is observed during an epidemic—an effect which could only be produced by an agent universally diffused like the air; 10, occupations which afford proper exercise, and thereby increase the *active force*, protect, to a certain extent, against the disease, whilst a sedentary habit predisposes to it; 11, things which are known to be injurious in times of cholera, are those which diminish the *active force*, prolonged sleep, especially after meals; fear, and other painful impressions; insufficient diet; excess; vegetable food (Tytyler called cholera the *rice disease*) wanting azote, and abounding in carbon; beer; unboiled water; milk; prolonged cold baths; and, generally, those agents which increase the quantity of carbonic acid in the system; 12, bleeding, if employed before coagulation, has a quickly beneficial effect, proving that the disease depends on an *excess of resistance*; 13, Casper has observed that *sudden death* is more frequent in periods of great barometric elevation; this circumstance has been also noticed in cholera; 14, the Doctor's personal observations on the pulse, already mentioned.

The treatment will be guided by the abundance or deficiency of blood. In the first stage of the disease, bleeding, evacuants, and sudorifics will diminish the specific weight of the blood, increase the fibrine, and thereby, increasing its elasticity and consistency, will promote its efficiency as a conductor of the *active force*. Under another phase, the same treatment would be injurious.

The author arrives, in conclusion, at the following definition of cholera:—*Venous plethora, caused by an excessive resistance, which produces stagnation of the blood with its consequences.*

We have thus presented to our readers, with

as much conciseness as possible, a theory which at least will be admitted to have the recommendation of novelty, and which the author supports and illustrates with much ingenuity and research. But he is too sparing in his meteorological facts; for the only contribution of this kind with which we are favoured is a diagram of the barometrical readings at St Petersburg during the years 1830-53, which might have been constructed in such a manner as would bring out the comparative results with greater clearness and effect. The statistics of the barometer, consisting of facts carefully observed and well compiled, and derived from all countries in the old world and the new which cholera has attacked, in years of sickness and years of health, would form an acquisition of the highest value; and if the excess of pressure in epidemical seasons were fully established, it would be the next, and not a difficult, step to construct a pathological theory. Meanwhile the change of pulse which Dr. Poznanski has observed at such periods, is a subject well worthy of attention, and if English observations agree with Russian, this symptom would be of the greatest use in house to house visitation, and probably even more important than the premonitory diarrhoea, which, if it always precedes the malignant form of the disease, precedes it in some cases only by a short interval.

Dr. Poznanski cites the following passage from Huxham, in the introduction to his pamphlet, which we shall place at the end of this notice:—

"But neither does this morbid sluggishness arise suddenly, nor in all persons alike; for it comes gradually when the north wind and dryness have long prevailed, and it depends not only on the state of things at the time of the disorder, but on that which precedes it. Moreover, this condition of the atmosphere may be not only innocuous to relaxed, pituitous persons, but highly invigorating."

On Mineral Waters: their Physical and Medicinal Properties, with Descriptions of the different Mineral Waters of Great Britain and the Continent, and Directions for their Administration. By ROBERT MORTIMER GLOVER, M.D., F.R.S.E., M.R.C.P., &c. pp. 376. London: Renshaw. 1857.

"Water! water! everywhere;"

We cannot go on to say

"But not a drop to drink."

for all the water here is to drink, or to be absorbed in some way; to be rubbed in, sat in, bathed in, or plunged in. A chatty volume on mineral waters has really been a great desideratum for some time past. Dr. Glover has given one to the world which contains a great mass of information, told in an easy way. Before plunging into the Waters, there are some general remarks, which, while they are appreciable to the public at large, are by no means valueless to the medical practitioner. One idea in particular strikes us as being capable of a practical expansion of no small extent. The sea, Dr. Glover remarks, is the chief mineral water. Now this is one of those simple

but very important suggestions, which originate only in thoughtful minds. If any mineral water possesses alterative or deobstruent properties, sea-water, above all, should possess them, developed to the highest degree. The application of this idea is well worth the energies of an enterprising physician. One thing is certain—viz. that the supply would exceed the demand, with the additional advantage of nothing to pay. Perhaps the Spa proprietors might find the competition too strong, except in the case of chalybeate springs, and “the sad sea waves” might recover their tone of spirits by reason of increased prosperity, and an influx of good company. The introductory part of the volume relates to the value of mineral waters, and here Dr. Glover appears to be a judicious eclectic to the mode of their discovery; their nature as regards contents and thermality; their medicinal action and modes of exhibition; and finally, some general advice is given as to the detection of a mineral water, and the adjuvants of climate, diet, and regimen.

The main portion of the work is divided into five parts, which treat successively of Mineral Waters North of the Trent, and Mineral Waters South of the Trent; of the Waters of Belgium and France; of the Waters of Germany, Switzerland, Savoy, and Italy; of the Mineral Waters of Ireland and Scotland, and of some miscellaneous matters.

Some idea of Dr. Glover's diligence may be formed, when we state that his work contains an account of no less than 156 spas. We miss, however, a spring well known to ourselves, and frequented at one time, for a long time, and as far as we know now, by many thousands of visitors in a season. Our North Country friends will know the picturesque “Whittle-le-Woods,” not very far from Houghton Tower, where King Jamie created that most ubiquitous, long-lived, and ever-to-be cherished knight, Sir Ioin. We fear that Whittle-le-Woods will feel itself aggrieved, albeit, that it is not aristocratic. The springs there are chalybeate and saline, and will vie in real therapeutic merit with many others more successful in attaining to the dignity which surrounds those at fashionable watering-places.

One is naturally anxious to know what an expert on such matters thinks of the Kreuznach waters. We find our own opinion very strongly echoed by Dr. Glover. He evidently totally disbelieves all the nonsense that has been talked about fibroid tumours disappearing under a course of Kreuznach waters, although he does not directly refer to the subject. With regard to the bromine in the Elizabeth Quelle at Kreuznach, Dr. Glover says,

“I know abundance of brine springs in England, and especially the brine springs about Birtley, in the county of Durham, from which bromine could be obtained as readily as from the waters of Kreuznach.”

So much for the amount of bromine in these be-puffed springs. Now for the general utility of these waters.

“According to the analysis of Mihalhe and Fiquier, a pint of sea-water contains nearly a grain of bromide of sodium [the Kreuznach contains a quarter of a grain in the same quantity], so that the advocates of the efficacy of the water of Kreuznach relying upon the existence of its bromine, must admit that sea-water is likely to be more beneficial.”

Again :

“A brine spring like Kreuznach is valuable in the treatment of diseases to those who live in an inland country; but there is nothing which it can accomplish but what the sea will do as well, or better, especially as there is the sea air as well. I could easily quote cases from my own experience, and cite from the works of others quite sufficient to prove this.”

The last part contains an enumeration of the diseases in which mineral waters are beneficial. There is no attempt to exalt the virtues of mineral waters in general, or still better, of any particular springs. Perhaps some readers would say that Dr. Glover was not an enthusiast upon this subject. We beg, however, to recommend the work most heartily, as containing full value for the money expended in buying it, and for the time and attention expended in reading it. It is a very useful and agreeable book, and is a complete repertorium of knowledge compressed into a very moderate compass.

Hydropathy; or, the Natural System of Medical Treatment. An Explanatory Essay. By EDWARD W. LANE, M.A., M.D. Edin. London: Churchill.

HYDROPATHIC establishments being brick and mortar machines to make money with, every proprietor of such a place is pretty sure to write a book puffing his own wares. Dr. Lane is the superintendent of a house at Farnham. His book is not well written, and contains nothing particularly new or clever, if we except the rather startling assumption on the title-page, that hydropathy (with its elaborate machinery of sheets and baths and attendants) is a “natural system of medical treatment.” This is new. The ingenious way in which the author's tremendous experience is implied is rather clever. There is no doubt that the judicious application of water treatment is a valuable adjunct, but the book descriptive of its value and its uses has yet to be written by a far different man from Wilson, Gully, or Lane.

Burning the Dead, or Urn Sepulture, Religiously, Socially, and Generally Considered. London: Philip and Son, Fleet-street.

THE subject treated of in this pamphlet is at least worthy of discussion at the present time; and, however startling, or even repulsive, a direct proposition to substitute burning for burying may appear at first sight, mature consideration might lead many to the conclusion that the former would be by far the least objectionable custom of the two, if existing prejudices could be overcome. That the products arising from the decomposition

of dead bodies, by escaping into the atmosphere, or by poisoning springs and drains, are often powerfully active amongst the various causes which affect the health of the living, is indisputable, although to what extent it may be difficult to prove, while so many other causes of disorder and death exist. If the population of the world is increasing at the rate some suppose, mankind will ultimately be driven to this mode of disposing of their dead, as an act of self-preservation.

The plan here proposed for reducing a body to ashes (if practicable), appears as decent, speedy, and effectual a method as could well be conceived.

Traité de l'Impuissance et de la Stérilité chez l'Homme et chez la Femme. Par le Docteur FELIX ROUBAUD. Paris: J. B. Baillière. 2 vols. pp. 831.
Treatise on Impotence and Sterility in both sexes. By Dr. FELIX ROUBAUD.

THIS subject is certainly difficult to handle in a systematic work, and requires in the man who attempts to write comprehensively upon it, not only actual experience,—intimate acquaintance with the anatomy, physiology, and pathology of the generative system of both sexes, a thorough insight into the general principles of medicine and surgery, a complete knowledge of the world and the workings of society,—but also a philosophical spirit, a calm and sound judgment, and a skill of diction capable of clothing in becoming language descriptions and facts which, were it not for the exigencies of science, had better be always left in the shade.

We are bound to say, after having read M. Roubaud's work, that he has proved quite equal to the task, and that he has produced a book of very great therapeutical value, the tone of which, like Parent Duchâtelet's, is throughout scientific and unstained by the nature of the subject.

It is certainly a fortunate circumstance for science and suffering humanity, that men of merit are now and then found who will devote their attention to subjects from which the generality of scientific inquirers shrink. No doubt but such men as Boerhaave, Astruc, Hunter, and many other more recent writers on medicine and physiology, have treated, in a masterly manner, various points connected with impotence and sterility; but a complete work on both these pathological states, as regards the two sexes, was still a desideratum which M. Roubaud's treatise eminently satisfies.

Of course the aim to be held in view by the author of such a book is of a practical kind; he undertakes, in fact, to teach his professional brethren how to remedy, in curable cases, sterility and impotence; and, we must confess, that herein M. Roubaud has to a certain extent succeeded. For, now that we have read his treatise, we feel that we have been made acquainted with new therapeutical resources, and improved means of coping with the complaints in question.

It should be remarked, in *limine*, that the

author gives very numerous proofs of his intimate acquaintance with the literature of the subject. The readers of the book will thus have the advantage (of which we have ourselves felt the value) of having their attention called to many excellent essays and papers scattered in periodical publications. We need hardly observe, that it is a Herculean labour to wade through such publications in search of articles and memoirs on stated subjects. References are so numerous and so detailed in M. Roubaud's work, and his original facts are so carefully collected, that it would be evident (had the author not stated it in the Introduction) that his attention has been for many years directed to the subject of the treatise.

The work is divided into two principal parts (1. Impotence; 2. Sterility), which are each subdivided into two sections, devoted respectively to the male and female sex. Now one of the headings of these sections presents an unusual combination of words,—viz. "Impotence in the Female." The author states his views in that respect in the following manner:—

"Sexual congress requires on the female side a combination of certain circumstances; and it must be admitted that the absence of one or more of those circumstances necessary for normal congress constitutes a morbid or pathological condition." p. 450.

M. Roubaud then enumerates the circumstances, his observations upon them being presented under these heads: Actual physical obstacles, and Frigidity.

On this latter head we are at issue with the author, for it is plain that Frigidity, in its usual acceptation, cannot be put by the side of impotence as cause and effect. We are, however, bound to say that M. Roubaud does *not* take the word impotence in its usual acceptation, but applies it to the absence of one or more of the circumstances necessary for normal congress, as we have just stated.

The title of another of the sections also sounds somewhat strange,—viz. "Sterility in Man," to which term the author very justly prefers "Inaptitude to procreation." The chapters of this section, as is the case in other parts of the work, are founded on physiological data. Thus we have the three following chapters: 1. Derangements in the Function of Secretion of the Liquor Seminis (testes); 2. Imperfections as regards its Preservation (vesiculæ seminales); 3. Morbid condition as regards its emission (urethra). The first chapter presents a comprehensive view of the derangements of the secretion depending (1st) on general and (2nd) on local causes,—as age, temperament, constitution, morbid states, &c., for the first division; and the various malformations and affections of the testes for the second. These chapters are extremely instructive, and contain facts, arguments, and deductions of a very important kind.

The two principal parts of M. Roubaud's book (Impotence and Sterility), to which we have alluded above, are preceded by physiological remarks on the generative functions, which occupy no less than 150 pages. Much useful information will

be found in these remarks, the historical sketches being especially interesting. As to the actual state of our knowledge on these functions, the author says, in conclusion :—

"Though we are now in possession of many reliable facts (on which I have just dilated) bearing upon the liquor seminis and the ova, it must be confessed that the problem of fecundation is far from being solved. It is true that the question is now reduced to two points only, but they are certainly the most difficult of elucidation: 1st, Is it in the ovary, Fallopian tube, or uterus, that the liquor fecundates the ovum? 2nd, What is the nature of the contact, what is the essence of the union, between these organic products?" p. 98.

But it may be presumed that our ignorance on these points will be gradually lessened, if such men as the late Professor Kobelt of Friburg, on whose work M. Roubaud draws largely, continue to investigate the mysteries of fecundation. Prof. Kobelt's work has been translated into French by Kaula, with the following title: "De l'Appareil du Sens Génital des deux Sexes au point de vue Anatomique et Physiologique; Strasbourg, 1851." It is, however, a very cheering circumstance, as becomes evident by M. Roubaud's book, that our art possesses many resources in cases of impotence or sterility in either sex; but we should carefully remember that the secret of the treatment lies principally in making out the exact *ætiology* of the cases for which we are consulted. Almost every page of the work before us bears testimony to the truth of this remark. Take, for instance, impotence arising from the morbid state of the digestive canal, or from moral sympathies: the cases brought forward show very distinctly that no success would have been obtained had the real causes of the temporary impotence not been discovered. The impotence of these ætiological considerations is also made apparent in that portion of the book treating of the inaptitude to procreation which may affect men who have suffered from generalized syphilis. On this head, the author ventures on surmises which are worthy of attention, and which run as follows:

"If it is true (and daily experience hardly leaves a doubt on the subject) that the syphilitic virus destroys the fetus, and causes the expulsion of it at a period more or less remote from its complete development, it must be admitted that the virus acts, as regards intra-uterine life, from the moment the germ is impregnated to the end of gestation. When the expulsion takes place after the symptoms of pregnancy have been apparent, no doubt exists as to a miscarriage having occurred; but if the expulsion takes place within a few days of fecundation, and especially if only one month elapse between the impregnation of the germ and its expulsion, the miscarriage may pass entirely unnoticed, and the woman has no idea that she has been fecundated and has aborted. Such a miscarriage, soon after the impregnation of the germ, may occur over and over again, and we may then remain convinced that the individual affected with the syphilitic virus may be looked upon as convicted of inaptitude to procreation." p. 566.

Amongst the circumstances which may be an obstacle to the reception of the liquor seminis into the uterus, the author mentions (p. 744) the presence of *calculi* within the cervix. He advises removal with forceps, or a kind of uterine litho-

trity, if there be, by traction, any risk of injuring the mucous membrane. M. Roubaud has, however, not had any personal experience of the presence of such calculi. He deliberately condemns the *scraping and sweeping* of the mucous surface of the uterus with a kind of scoop, advocated by the late Récamier. The author considers (p. 748) that inflammation, ulceration, and cauterization of the cervix uteri are the most ordinary causes of the obliteration of this canal. Cauterization is, according to him, extremely likely to be followed by such results if a tent be not left in the cervix after it has been cauterized.

The chapters in which the diseases of the uterus are considered which may prevent fecundation are very complete and interesting. At page 820, M. Roubaud, in speaking of the causes of congestion, erosions, and ulceration of the neck of the uterus, ventures the opinion, that the great number of cancers of the uterus which are now-a-days met with in practice is owing to practices said to be very common in France.

As the author states that he is zealously pursuing his investigations on this subject, it may be expected that every succeeding edition will be more and more practical. More conciseness may then be introduced into some portions of the book without detriment to lucidity, and such trifling oversights as quoting *in extenso* the same passage of Parent Duchâtelet, at p. 568 and at p. 759, may be rectified.

These are, however, trifles, and we have, in conclusion, no doubt but M. Roubaud's work will take a very high rank in modern medical literature.

DEATH OF DR. MARSHALL HALL.

DEATH, that most unsparing of tyrants, has exacted from the greatest physiologist of the age the last debt of nature. Slowly, surely, and relentlessly, disease has been undermining the earthly tabernacle of a mind which, for vast powers, high purposes, and indomitable energy, has found no superior in its native land in the present half-century. On Tuesday last, the 11th inst., Dr. Marshall Hall died, at Brighton, aged sixty-seven years.

It is impossible to record this melancholy event without feelings of the deepest sorrow. The loss is one which all must feel most keenly who have a reverence for high endeavours, for earnest devotion to science, and for all the sterling qualities which can adorn a man. Science has lost the worthiest of her sons, medicine has lost a great master, and philosophy a great thinker. The clear and vivid intellect of this celebrated man has steadily and successfully risen superior to the depressing influences of disease for the last fifteen years. Even during the present year, when confined to one room, his chamber has been a scene of intellectual activity. Physical debility, which robs most men of their power of thinking and reasoning, had not dimmed the brightness of his wonderful mind. Clear and penetrating, and impelled by a wide philanthropy, the last contribution of Dr. Marshall Hall to science has been a pre-eminently useful one to the cause of humanity.

It is thus that great men should die. There is a grandeur in such a life-end to which the mere external grace of a falling Caesar is not for one moment comparable.

Dr. Marshall Hall was born at Basford, in Nottinghamshire, in the year 1790. His father was a manufacturer, and a man of no small capacity and information, and had the merit of being the first person to perceive the value of chlorine as a decolorising agent, and applying it on a large scale. The gifts of intellect were bestowed with no sparing hand in his family. The father and two sons fully vindicated their claims to high intellectual endowments. But Dr. Marshall Hall has eclipsed his less brilliant relations. What in them was acumen and sagacity, was developed in him into genius. There was in him that rapid and far-searching intellectual vision which travels into regions far beyond the common ken of man, visible and appreciable only to the eagle glance of an almost prescient inquirer.

The history of such a man cannot fail to present numerous points of interest. The investigation of the rise and progress of a mind which has ever been foremost in the ranks of science, must afford many good and useful lessons. No fitful glare can be recognised in this life—no charlatanic attempt to pluck a crown of laurels which was not deserved; but a stern, conscientious, and faithful continuance of patient scientific toil, and the solid reward of a vast reputation.

The first step in Dr. Marshall Hall's education was taken at Nottingham Academy, then conducted by the Rev. J. Blanchard. From this school he went to Newark where he acquired some elementary medical and chemical knowledge. But the first salient point in the life of Dr. Marshall Hall was his matriculation at Edinburgh University in the year 1809. For a vigorous and apt mind, no better school could then have been chosen. In the present day it is hardly possible to realize the enthusiasm which inspired Edinburgh at that time. There were giants in those days. Enthusiasm, indeed, is almost too tame a word. There was a furor, an excitement produced by the united influence of a complete galaxy of talent. It was impossible that such men as Cullen, Home, Rutherford, Gregory, Hamilton, Bell and Barclay, should kindle in the ardent minds of a vast concourse of students a flame which should burn with answering brightness to their own. From the school of that time we know many great men have sprung. It is unnecessary to particularize names which are "familiar in our mouths as household words." In that genial atmosphere, then, did Marshall Hall first imbibe that enthusiastic love of science which has been his most marked characteristic. With youthful impetuosity he plunged into the study of chemistry. Not content with merely assimilating the accepted doctrines of the science, he boldly endeavoured to push its boundaries farther. With wonderful power of generalization for so young a man, and with such small materials as then existed for the purpose, Dr. Marshall Hall pointed out that there was a grand distinction

between all chemical bodies, which ruled their chemical affinities. He showed that this distinction was the presence or absence of oxygen. That oxygen compounds combined with oxygen compounds and compounds not containing oxygen with compounds similarly devoid of that element; and that the two classes of compounds did not combine together. He believed that this general law would elucidate other chemical doctrines, and might prove valuable in the prosecution of still more recondite principles. But a mind of such soaring aspirations was not likely to confine itself even to such a comparatively wide field as chemistry. The vast domain of medicine was before our student, rich in unexplored regions, abounding in all that could excite his eager spirit of inquiry, and reward his love of definite results. It was exactly at this period in the history of modern medicine that physicians were taking stock, as it were of their old principles. Morbid anatomy, pursued in close connexion with clinical medicine, was showing the defects of diagnosis. With the sagacious eye of one who was capable of seeing that the great necessity of the day was a science of diagnosis, Dr. Marshall Hall threw himself into the prosecution of this immensely important department of medicine at once. Here again we find fresh evidence of his eminently progressive spirit. No mere systematizing of what other men had gathered, but an original and comprehensive treatise resulted from the labours of his student life and early years in the profession.

In 1812, Marshall Hall took his degree of M.D., and shortly afterwards was appointed to the much-coveted post of house physician, under Drs. Hamilton and Spens, at the Royal Infirmary of Edinburgh. In the following year we find Dr. Hall lecturing on the Principles of Diagnosis to a class, amongst whom were Dr. Robert Lee and Professor Grant. It was from this course of lectures that the treatise on Diagnosis, which was published in 1817, took its origin.

In 1814, Dr. Marshall Hall left Edinburgh, after a residence there of five years. Great as was the individuality of this remarkable man, we cannot but point out that he was reared in a great school, taught by great men, and infected with an enthusiasm which pervaded, in some degree, all who came within its magical circle. Before entering upon his career as a private practitioner, Dr. Hall determined to visit some of the continental schools. We find him therefore, very shortly after his departure, successively at Paris, Berlin, and Göttingen. The journey was made partly on foot, and armed. At Göttingen, Dr. Hall became acquainted with Blumenbach.

In 1815, Dr. Marshall Hall settled at Nottingham as a physician, and he speedily acquired no small reputation and practice. After a time the appointment of physician to the General Hospital there was conferred upon him, and in that sphere he laboured until his removal to London, about ten years after his first settlement at Nottingham. Of his work on Diagnosis it is almost unnecessary for us now to speak in terms of praise. Compre-

hensive, lucid, exact and reliable, this work has in the main, stood the test of forty years' trial. A better has not been produced. It was at this period of his career, too, that Dr. Hall made his researches into the effect of the loss of blood, the result of which was embodied in a paper and read before the Royal Medical and Chirurgical Society in 1824. This paper and another in 1832, detailing Dr. Hall's "Experiments on the loss of blood," were published in the Transactions of the Royal Medical and Chirurgical Society." It is hardly possible to overrate the importance of these inquiries. They revolutionized the whole practice of medicine. A new light broke in upon the medical world. A distinction, not recognised before, was drawn between inflammation and irritation. It was pointed out that delirium and excitement were by no means necessarily declaratory of cerebral or meningeal inflammation, or even congestion. Loss of blood was shown to be at the root of much that had passed before for various grades of inflammation. Practical rules were educed both for treatment and diagnosis. It was shown that active inflammation produced a tolerance of bleeding from a free opening in the upright posture; and the rare merit of supplying at once a rule of treatment and a rule of diagnosis was Dr. Marshall Hall's. Other works came forth from his pen about this time, for his mind was teeming with ideas and his activity as an observer was unparalleled. It is hardly possible to enumerate all, but in 1827 came the "Commentaries upon various Diseases peculiar to Females"—a work which may still be consulted with advantage.

It was in 1826, that Dr. Marshall Hall sought this great metropolis as the umbilicus of the world. So active and earnest a mind could not find enough to satisfy its eager cravings in a provincial town. It was here, in this mighty city, that he determined to measure himself again with numerous competitors, and to win, if possible, all the honour and all the rewards that fortune can give to those who woo her stoutly. The mind of this great man was essentially metropolitan and liberal. A fair field and no favour, and victory to the strongest, were the characteristics of his mind.

The next onward step in Dr. Marshall Hall's career was a series of researches into the circulation of the blood in the minute vessels of the batrachia. A great step in physiology resulted from these. It was shown that the capillary vessels, properly so called, are distinct absolutely, both in structure and function, from the smallest arteries or veins; that the capillaries, or *mathamata*, are the vessels in which the nutritive changes in the economy are carried on.

But the great source of Dr. Marshall Hall's honour, the basis upon which his fame must rest in all time to come, was yet undeveloped; his paramount claims to the admiration of his contemporaries and of posterity consist in his discoveries concerning the nervous system. Like all really important discoveries in natural science, those of Dr. M. Hall have had great practical effects. The soundest theory has been shown to be the best foundation

for practice. That stupid heresy, that there is a vital distinction between the practical and theoretical man, was never more completely disproved than in the case of Marshall Hall. But we must endeavour to trace the progress of his researches. While engaged on the Essay on the Circulation of the Blood, it happened that a triton was decapitated. The headless body was divided into three portions; one consisted of the anterior extremities, another of the posterior, and a third of the tail. On irritating the last with a probe, it moved and coiled upwards; and similar phenomena occurred with the other segments of the body. Here, then, was a great question. Whence came that motor power? To set at rest that question, to solve that problem, has been the great labour of Dr. Marshall Hall's life.

The establishment of the reflex functions of the spinal chord; in short, the whole of the excito-motor physiology of the nervous system is the sole work of Dr. Marshall Hall. And not only this, but he has shown that there are in reality THREE great classes into which the various parts of the nervous system resolve themselves; the cerebral, or sentient-voluntary; the true spinal, or excito-motor; and the ganglionic. This was the real unravelling of that perplexed and tangled web which none had before been enabled to accomplish. The true idea of a nervous centre could never be said to have existed before the time of Marshall Hall. The ideas of centric and eccentric action, of reflexion, &c., so necessary to the comprehension of nerve physiology, were unknown before the labours of this great discoverer. But these physiological discoveries were not mere barren facts. How rich a practical fund of therapeutical measures naturally follows the physiology and pathology of the excito-motor system, every well-informed physician can testify. Two departments of medical practice have gained incalculably. The success of Dr. M. Hall in the treatment of nervous diseases was almost entirely the result of a rigid application of his own physiological discoveries to their pathology and therapeutics. Obstetricians have found their art elevated more than any other branch of medicine. In the place of uncertain and empirical rules, there are now definite and scientific principles upon which to fall back, with the unhesitating assurance that they will stand in good stead. The most complicated of all physiological acts—viz., the act of parturition, has, by the aid of the excito-motor system, been unravelled and reduced to beautiful harmony, if not simplicity. In like manner, many of the diseases of pregnancy are explained and illuminated by the same physiological knowledge. Innumerable symptoms of other diseases are rendered intelligible and rational which before were obscure and empirical. But to follow out the influence of Dr. Marshall Hall's discoveries through their numerous and important ramifications would be almost to write a volume on the principles of medicine. It is impossible to say when we shall cease to find some new and important application of his discoveries to the great art of healing.

We cannot pass by this period of Dr. Marshall Hall's life without remarking upon the disgraceful treatment he received from the Royal Society. The days of persecution had happily passed by, but the day of dull obstructiveness still remained. The Royal Society thought Dr. Hall's memoir "On the True Spinal Marrow and the Excito-Motor System of Nerves" unworthy of publication. So much for the acumen of this Society. A very different verdict has, however, been given since by the great body of scientific men; and the Society which formerly received this great man's contribution coldly, now mourns the loss of its brightest and most illustrious member.

Since the promulgation of his researches upon the nervous system, Dr. Marshall Hall has been principally occupied with extending, applying, and developing them in every possible direction. The admirable success with which he indoctrinated the profession at large with his views must be attributed as well to his native lucidity as to their inherent truth.

During the time of Palmer's trial, it occurred to Dr. M. Hall to institute a physiological test for the recognition of strychnia. As if to show the absolute correctness of his views, and how unlimited were the number and nature of the scrutinies they would bear, he found that a frog, immersed in water containing the $\frac{1}{1000}$ part of a grain of strychnia, would, in process of time, be thrown into tetanic convulsions. For the details of these experiments we must refer to *THE LANCET* of last year. The physiological test was found to be far more delicate than the chemical. Here was an instance of sagacity and precision of thought which would have done credit to any man in the flower of his age.

The last and crowning effort of Dr. Marshall Hall in the cause of science and humanity has been his discovery of what is now universally known as the "Marshall Hall Method" of restoring asphyxiated persons. How completely and irrefragably he has proved the inutility and danger of the practices hitherto in vogue for the resuscitation of asphyxiated persons! Space prevents us from going into the theoretical details of Dr. Marshall Hall's method; but our columns have, for any time these last six months, contained overwhelming proofs of its *truth* and adaptation to practice. It is pleasing to find that this last labour of a great mind has been a labour of love, something added to the stock of human happiness, something taken away from the bitterness of life. It is singular enough that in the very place where Marshall Hall has drawn his last breath, two cases have lately occurred illustrating the superiority of the "Marshall Hall Method" over the empirical rules of the Royal Humane Society. In one case of drowning the warm bath was administered; in another, the "Marshall Hall Method" was resorted to: in the first case death was the result; in the second, restoration to life. It is also remarkable that in this number of our journal should be recorded three more examples, illustrative of the successful application of the

"Marshall Hall Method" of treatment. It is curious, too, that one of them should have occurred at Nottingham.

In the practice of his profession, Dr. M. Hall was very successful. He linked himself early and resolutely to a great subject, and rose into fame upon his development of it. He realized an ample fortune as the reward of a life of unremitting toil. We do not mean to imply that competency was hardly earned under such conditions. Such a man would have been less than happy in a different sphere. Labour was to his restless and indomitable spirit a necessity. Even now, when we are recording the death of this illustrious and lamented physician, there is a volume in the press,—a recent effort of his prolific mind; and until within two months before his dissolution, the mental energies of this extraordinary man were engaged in preparing for publication, in *THE LANCET*, a series of papers, entitled, "THE COMPLETE PHYSIOLOGY OF THE NERVOUS SYSTEM."

It is somewhat remarkable that Dr. Marshall Hall never held the office of physician in an hospital in London. He was only physician to a dispensary for a short time. He lectured at the Aldersgate-street and Webb-street Schools of Medicine, and also at St. Thomas's Hospital Medical School. He was a candidate for the Professorship of Medicine at University College upon one occasion; but owing, it is believed, to some improper influences, matters assumed such an aspect as to induce Dr. Hall to retire from the field.

We have thus far considered Dr. Hall as a man of science. In other relations of life he was equally deserving of our highest respect. As a politician, he was liberal in the highest degree. He was a strictly moral man, and was deeply imbued with the sense of the obligation of a *practical* cultivation of religion. That which he thought right to do, he *did*, with unswerving honesty and courage. All subterfuge, trickery, quackery, and guile, were utterly foreign to his nature. So simple and childlike was he in disposition, as hardly to be able to imagine in others the guile which had no home in his own breast. He was a kind husband, a most indulgent father, and a faithful friend. He married, in 1829, Charlotte, second daughter of Valentine Green, Esq., of Normanton-le-Heath, Leicestershire. Mrs. Marshall Hall's maternal grandfather was M. P. for Shaftesbury, and son of Dr. Cromwell Mortimer, physician to the Prince of Wales, father of George III. Throughout the protracted illness of Dr. Marshall Hall, the assiduous, devoted, and unremitting attentions of an affectionate wife were probably never surpassed. This testimony is due from personal observation of the fact. The deceased has left one son, who has relinquished the profession for the rural life of a country gentleman.

We must now close our notice of one over whose name we would fain linger. Melancholy as it is to say he *was* amongst us, our sorrow is stayed by the reflection that he *did* not live in vain. All that a grateful profession has to give

to his memory will be given. We shall still think of him with affectionate respect as a Father in medicine, but as a child in the purity and simplicity of his mind. Though no title has adorned the name of the great Marshall Hall, we who are left behind will esteem him as one who would have graced rather than have been graced by honours however exalted. The *title* which he preferred beyond all others was that of the English physiologist.

The mortal remains of this distinguished man were, on Wednesday last, removed from Brighton to Nottingham, where, we believe, a post-mortem examination has been made by his brother-in-law, Mr. Higginbottom, his nephew, Mr. Higginbottom, Jun., and Dr. Ransom, physician to the Nottingham General Hospital. It is believed that the death of Dr. Marshall Hall was caused by exhaustion produced by a stricture of the œsophagus of many years' standing, accompanied latterly, it was considered by many eminent surgeons, with malignant ulceration of the part. Dr. Alfred Hall, of the Old Steyne, Brighton, was one of the chief medical attendants of the deceased in his last illness. Sir Benjamin Brodie had long since pronounced the malady from which Dr. Marshall Hall was suffering to afford no hope of the application of any permanent remedy.

Medical Annotations.

"No quid nima."

FOLLOWING closely on the elaborate but fruitless discussion by the Académie de Médecine as to the use of an apparatus in administering anæsthetics, M. Heurteloup has read a paper on the subject before the French Academy of Sciences. This was prefatory to introducing a contrivance of his own for employment during inhalation. Its principal points were, that the vapour, being pumped by a bellows from a reservoir containing chloroform, emerged through a very small aperture, the strength of the vapour inhaled being regulated by the distance at which this aperture is held from the nostrils. The apparatus is simple, but, like most other contrivances of the same kind, presupposes a model patient educated to its use, not nervous, frightened, inspiring irregularly, jerking the head at every sniff, and breathing in every way except that most desired by the operator. Unfortunately, anæsthetics are seldom employed without one or more of these drawbacks occurring; nor can this be marvelled at when we consider the "hopes and doubts and fears" to be resolved in a few minutes for the patient's weal or woe.

It is in this country that the most laborious investigations as to the action and use of anæsthetics have been made; and nothing more peculiarly marks the advanced intellectual character of the present generation than the rapidity with which a knowledge of their effects has been attained by the public. There is scarcely a poor

hospital out-patient who does not throw out a broad hint for chloroform on the smallest suspicion of the slightest operation. Equally rapid is the spread of any reports of untoward accidents occurring during its administration; and the two unfortunate cases of death which happened last week in metropolitan hospitals have formed the staple subjects of those feeble questionings which medical men have continually to endure from non-professional gossips—people so prone to rush to conclusions, and whose conclusions are so seldom worth a rush.

Without commenting on the recent untoward cases, or intending any direct allusion to them, it seems to us that it is full time the representatives of the profession in England should take stock of our knowledge of anæsthetics, and what has been learnt from the practical experience of ten years. Then a brief report for professional guidance in their administration might be drawn up. By representatives, we mean those in whom the profession has faith—selected fellows of the medical societies, and learned professors at Edinburgh and Dublin, as well as representatives of the corporate bodies. A commission thus constituted would find far more important matter to discuss than the advisability of employing inhalers or responsibility in case of accident—subjects on which the French disputants split so many straws without a single ear attending. How far existing disease should influence the employment of anæsthetics; what operations most necessitate their use; the means to be used; the signs of which most note should be taken; the means to be resorted to in case of accidents, and the warnings of their occurrence. These subjects, with a careful summary of the recent important guides to judgment in employing anæsthetics (as far as our knowledge has hitherto gone), would form a report whose value the profession would, we believe, highly appreciate. It would be the duty of Government to forward such a report, drawn up by such authorities, to every member of the profession.

We can readily believe that the House of Lords feel an innate aversion to having such subjects as the Burial Acts Amendment Bill forced on their attention, and are inclined to consider as rather a bore any member who persists in noticing such unsavoury topics, or exclaims with King Richard,

"Let's talk of worms, of graves, of epitaphs."

for science, being abominably democratic, demonstrates that the water, and gas, and salts, which make up the human being who slinks through the world in the rags of Lazarus, are identical with those composing the fabric of Dives; that the same blood flows in the veins of the Leader of the House and the follower of the plough. The skull at an Egyptian festival, the slave in a triumphal chariot, could scarcely be more uncomfortably intrusive than a Bill about funerals to the House of Lords; for the coronet and ermine ob-

tain no more exalted position in the court of King Death than is afforded to the poor man whose cap is not one of maintenance, and whose coat is without arms. By way of protest against such abominable doctrines as those taught by Organic chemistry, the House of Lords, on Friday, the 14th inst., nobly demonstrated the dignity of their order, and marked their general disapproval of such dangerous and levelling teachings. There was a certain clause in the Burial Acts Amendment Bill which allowed the formation of burial grounds for the interment of none but paupers. To this clause the Bishop of Oxford honestly and earnestly objected, saying,

"He thought it quite enough that the distinction between this unfortunate class and the rest of the community should be prolonged during their lifetime, and he felt the strongest repugnance to the perpetuation in death of this enduring badge of separation. The poor man ought to be buried where his more fortunate friends and kindred were interred, and the misery of his pauper state ought not to cling to him in his cerecloth."

The bishop concluded by observing that their lordships knew what would be the effects of permitting this new kind of burial-ground. And to this significant hint their lordships responded by deciding that power should be given to bury paupers anywhere, so long as their remains do not pollute the elegantly rotting relics of the collapsed high and mighty, and come "between the wind and their nobility." It is possible that human beings, who thus carry their miserable pride and exclusiveness even beyond the precincts of the grave, might not be afforded another opportunity of companionship with those who *once* were paupers.

THE Bill for checking the indiscriminate Sale of Poisons, having been rough-hewn into a new form by the select committee of the House of Lords, has been laid on the shelf till next session. The list of poisonous substances enumerated has been very much curtailed. It includes arsenic and bichloride of mercury; hydrocyanic acid, cyanide of potassium, and oil of bitter almonds; chloroform, oxalic acid, aconite, opium, cantharides, cocculus indicus, tartar emetic, nux vomica, and the formidable array of the poisonous alkaloids. Poisons are to be sold only to adults and in the presence of an adult witness; and, after the Bill comes into force, none but medical men are to supply any of these poisonous substances except under the above restrictions. But there is a clause added which allows poisons to be served to persons known to the vendor. It seems now an acknowledged principle in passing a Bill of any sort always to make it twice as comprehensive as is requisite; thus providing a broad margin for the clippings of committees, with "ample room and verge enough" for the mutilations of members who think they satisfactorily fulfil their parliamentary duties by moving amendments on every subject introduced by any party

but their own. As it is evident that the Board of Health must have been aware of the objections to the first Bill proposed equally as well as a committee of the House of Lords, it is very lamentable that a really practicable measure was not introduced at first. If dearly-bought experience is to be taken as a guide, this delay of a Bill restricting the sale of poisons may be accompanied by the death, either accidental or intentional, of some whose lives the timely passing of a judicious measure might have saved.

BETWEEN perverse pauperism, the condition of those who though they can work are not ashamed to beg, and the position of the honest, earnest labouring man, hardly winning the hire of which he is worthy, there exists a No-man's land hitherto culpably neglected by society. Through it runs one of the broadest of the many ways that lead to destruction. Here is often sown the seed whence are reared our *classes dangereuses*; from that tangle of young city-Bedouins, of paulo-post future prostitutes, and of living satires on our boasted civilization, into which so soon degenerates the family of the whilom industrious man, fallen upon evil days through being "out of work."

There is no waste so great as the waste of a will to work—the non-employment of energies that fret under inaction, and rust by undesired repose. In London especially, there is a constantly fluctuating, but constantly large, number of persons willing to work, yet unable to obtain employment, and who thus are drifting into starvation or crime. Medical men have frequent occasions to witness and deplore both the causes and effects of this disastrous condition. To the labourer whose daily life is kept going by his daily toil, the calamity of sickness comes with weight unknown to the rich. But the bitterest struggle to the poor man often only begins when the disease has departed—when, returned from quiet, comfortable, hospital quarters, to

"The haunts of daily life,
Where is urged the daily strife,
With common wants, and common cares,
Which sow the human heart with tares,

he finds himself supplanted by the throng of workers, his place filled, and the fight to be begun anew, with frame still weakly and hands yet enfeebled—for he is "out of work."

This is but one of many causes, all tending to the same result; that those willing to toil sit idly because they have no means of obtaining employment; albeit there is abundance of work waiting to be done. The neglect to aid their honest endeavours is not only wrong, but it is what Talleyrand described as something worse—a mistake; for in the long run it is society that suffers. If the unemployed labourer starve, both he and his family become, *pro tanto*, more liable to disease. If he eat the bread of idleness, he soon learns to like its flavour, and lose that self-respect which is the truest dignity of labour. Other and less worthy thoughts soon take its place. "Idleness," says

South, "is the emptiness, and business the fulness of the mind; and we may infuse what we will into an empty vessel, but a full one has no room for more." If he come to look with an evil eye on those who refuse to help him that he may help himself, the result is too frequently the commission of criminal acts as degrading to him morally, as the sufferings entailed by his poverty have been injurious to him physically.

"Magnum pauperies opprobrium jubet
Quid vis aut facere aut fari."

We therefore welcome and wish prosperity to a society recently established for especially aiding those who are "out of work," and assisting them in the most practical manner. It is entitled the Royal Benevolent Industrial Society, and has been established by the zealous exertions of Lord Raynham; to whose earnest and practical efforts on behalf of the poor we have several times alluded. The Society is under the highest auspices, and has the Duke of Cambridge for president. The council (of which Lord Raynham is chairman) is composed of gentlemen highly and honourably known for their practical philanthropy. Dr. Henry G. Wright is the honorary physician to the Society. The working details are carefully arranged for the prevention of fraud, the efficient administration of the funds, and the rendering that immediate assistance which becomes doubly serviceable by its timely bestowal. For it is an useful truth comprised in that maxim of La Bruyère—"La libéralité consiste moins à donner beaucoup qu'à donner à propos."

THERE is no professional position more onerous and more replete with care than that of a surgeon to an emigrant-ship on a long voyage, who conscientiously does his duty. He has to watch over a crowd of folks of all ages, suddenly submitted to entirely new physical conditions. He has no judgment but his own to rely on or consult when it depends upon his knowledge to turn the balance of life or death. The intending emigrant, rendered wise by the experience of others, takes care to select a ship for his conveyance which is announced to carry an experienced surgeon. The shipowner, rendered worldly-wise by his greed for gain, takes care to prominently announce that his vessel is so provided. The poor passenger takes his family aboard, and only discovers the shameful deception too frequently practised on him, when, after a month or two at sea, his children, the embodied hopes on whose behalf he undertook the voyage, fall sick. Then "the experienced surgeon" proves to be some druggist's assistant, or unskilled novice, totally unfit to treat disease, but who has been attracted by such an advertisement as the following, extracted *verbatim* from *The Times*:

"SURGEON WANTED—For a vessel proceeding immediately to New Zealand. Good references and testimonials as to character and ability will be required. But as a diploma is not necessary, only a free passage to the above colony will be given. Apply," &c.

With the inducement held out, it may be surmised what attention is likely to be paid to his qualification, and how fitted he is to undertake for four months the sole charge of many lives exposed to the rapid and dangerous alternations of temperature entailed by that modern system of navigation known as the great circle sailing. The excuse offered by the ship-brokers and owners is that qualified surgeons cannot be obtained. This is a deliberate untruth, as the describing an unqualified man to be an experienced surgeon is a deliberate imposition.

By charging a few extra shillings to each passenger, the services of a really able and duly-qualified practitioner might be obtained without difficulty. This would not diminish the shipowner's profits, and would prevent the ruthless sacrifice of lives during the voyage, likely to occur from the employment of a man without qualification, and having only testimonials—possibly signed by his tailor—to vouch for his abilities.

If the attention of proposing emigrants were directed to the reprehensible practice which the advertisement above quoted illustrates, it would probably save many lives. We know no reason why they should not receive some direct guarantee of the qualifications possessed by the surgeon chosen to take charge of their healths and lives.

It would, moreover, be a stimulus to young practitioners anxious to go round the world before beginning to go through it, as the best man would thus be likely to obtain the best place.

THE neglect with which the just claims of army assistant-surgeons have been treated has met with a due reward. We are again in the thick of a mighty war, and the deficiency in the number of our army surgeons is so important that it is found necessary to advertise for candidates, in the hope of obtaining a supply. Possibly we shall next have recruiting surgeons marching our hospitals, in search of "fine active young men," willing to write A. S. at the end of their names, and thus tell two-thirds of the truth. The step now taken to obtain candidates is sufficiently significant; but a still more forcible illustration of the general feeling of discontent at the conduct of Government is the almost general refusal of the acting assistant-surgeons engaged during the late war, to resume their appointments, even when directly solicited: for of the whole 180, it is understood that but 50 responded to the invitation, whilst only 25 consented to serve. There can be nothing more disastrous, or more disheartening to our troops, than a dearth of surgeons during active war. Yet this must be the result of such a policy as that hitherto pursued; seeking to weary out the patience of claimants for army medical reform by thrusting in their way every stumbling-block which routine can supply for that deferring of hope which maketh the heart sick. Nothing excessive is claimed, nor is more demanded on account of the present absolute necessity for the immediate services of well-qualified assistant-sur-

geons. It would be beneath the dignity of our profession to retaliate by taking such an advantage of circumstances as that assumed by Government in its conduct to the assistant-surgeons since the end of the last war. But we have no fear of being considered unpatriotic when we state our belief, that young practitioners are justified in their refusal to enter the service under the present oppressive regulations.

THE last news from India is anything but cheering. Delhi remains untaken, and the extent to which the disaffection has spread continues undetermined. But the spirit of Nemesis possesses our soldiery, and the frightful acts committed by the mutineers are being avenged with a terrible retribution. After the accounts of the brutalities inflicted by the insurgents—a mere relation of which makes strong men shudder and pale with horror—we conceive that not even the mildest meeting-going youth—"a mere white curd of asses' milk"—who ever felt honoured by shaking the hand of a converted cannibal, will venture to lisp a protest against swift and sure vengeance on the evil-doers. Few doubt the final success of our arms. But there is one possible contingency which it is well to bear in mind and the disastrous effects of which none can calculate. If the staunch adherence of the other Presidencies should fail, there is little doubt that our Eastern empire would be in great jeopardy, and it is about Madras that the greatest anxiety is felt. We have no certain evidence to show in what manner the revenues of that grasping Company, to whose mismanagement so much is attributable, have been collected in the revolted Presidency. But there is a Parliamentary blue-book that comprises an authentic report of the inhuman and barbarous means long employed in Madras to obtain the revenue which swells the pockets of "John Company," the unworthy steward of these mighty dominions. We read therein of diabolical outrages practised on the people by native public servants scarcely less revolting than those committed by the insurgent natives—such as placing scratching insects on the scrotum or other sensitive parts, squeezing the testicles, thrusting chillies into the eyes of children, or introducing them into the vaginæ of women, tying females up by the arm and beating them over the pudenda, searing the flesh with hot irons, or nipping it with pincers. As all these inhuman practices have been for years employed, we hardly wonder that fears should be entertained as to the allegiance of a people who have been thus treated by the direct *protégés* of the government. We believe that no act of brutality to a fellow-creature was ever connived at or committed without due punishment following. We only hope that the people of England may not have to suffer for the deficiencies and misrule of those who should have been the first to suppress, for humanity's sake, the horrible atrocities now first heard of

through the report of a commission appointed by the House of Commons.

WHEN Pharaoh wished to thin the numbers of the fast-multiplying Israelites, he summarily commanded that all male children should be slain as soon as born. Popular prejudice and the usages of modern society scarcely admit the introduction, now-a-days, of so simple and efficient a method of avoiding the dangers of over-population predicted by Malthus. But various ingenious substitutes have been devised in place of Pharaoh's midwives. Thus, our laws of infanticide are so vague, or opposed both to common sense and to one another, that a wretched mother who puts out of the world the innocent witness of her shame, "the child of misery baptized in tears," obtains the benefit of a doubt even where no doubt exists. Then, the milk and bread that constitute the chief nourishment of children are so diluted and adulterated as to ill-supply their craving wants, or to actually engender disease. Syrup of poppies is beneficently supplied to ease their exit from a world which is to them one long wail of tears. Ingenious toys, of explosive tendency, are artfully devised to delude them into danger. Sweetmeats and playthings are coloured with poisonous pigments for their unsuspecting palates. Tender little children are exposed to the bitterest weather with their legs bared in a manner that would inevitably injure the health of strong adults. And lastly, the spirit of Herod prompted some ingenious Misonephist to invent that "wheel blessing to mothers," yclept a Perambulator. Greatly as mothers and nurses may venerate the name of the inventor of these machines, we seriously doubt whether the health of children, whose physical powers are thus, as it were, gymnastically weaned, is not frequently impaired by the too general and injudicious use of infant perambulators. It is undoubtedly far more convenient for the mother or nurse to propel a helpless child before her (when no one can accuse her of not looking *after* her charge), than to toil with it *υπο κολπω* during the daily walk, or subdue her pace to accord with its first feeble steps. But the change cannot always be pleasant to the infant, nor beneficial to its health. There is lost that sustained warmth of the mother's body, for which no artificial heat is an efficient substitute. Children are far too frequently taken out airing (we borrow the elegant phrase from the *Court Circular*) in perambulators on cold, windy, or gloomy days; when their inactive and unprotected position renders them peculiarly liable to suffer from the effects of exposure. Every one must have observed such unfortunate little victims being driven along our streets, lolling their heads in hopeless resignation, after the manner of calves in a butcher's cart, whilst their blue cheeks and watery eyes and pinched faces give presage of the impending catarrh, bronchitis, or pneumonia, the true cause of which the hastily-summoned doctor will scarcely fail to comprehend when he

notices the perambulator in the hall. Moreover these conveyances are often unnecessarily used for children fully able to walk, and who should be taught thus to exercise their limbs. It is, however, less trouble to the nurse to propel a great chubby two-year old child in its go-cart, than to guide and assist its early attempts at independent toddling.

The mortality of children in London is one of the most painful items in the Registrar-General's report. In 1855 the births in London numbered 84,944, whilst the deaths of children under five years of age amounted to 25,025; which means that considerably more than one-fourth of all the human beings born to endure for threescore years and ten are cut off before attaining the age of five years. Now that the employment of perambulators has become so general, we think it advisable to call attention to the evils that may arise from their *injudicious* use; and to point out how injurious to the health and lives of young children they might thus become. For, as

"A pebble in the streamlet's course
Hath turned the course of many a river,
A dew-drop on the baby plant
Has warped the giant oak for ever,"

so a very little want of care in the training of a child will suffice to shorten the span of its brief existence, or injuriously influence the whole of its future life.

WEEK after week, and almost day by day, there are recorded cases that point the necessity of more stringent measures to check the indiscriminate sale of poisonous substances. At Forbanc, the Rev. Dr. Alexander was recently poisoned through the gross negligence of an illiterate shopman, in the employ of a grocer named Whitfield. This ignorant fellow was allowed access to the arsenic which formed a part of the stock of the shop; and, in supplying a pound of arrow-root, mixed with it a proportion of arsenic sufficient to cause death. In the same shop there were found packets of corrosive sublimate, jalap, rice, and oxalic acid;—all kept in the same drawer.

At Chorley, a jury lately found a verdict of wilful murder against a man for poisoning his wife with arsenic and antimony. The chemical analysis was so admirably conducted by Mr. H. H. Watson, of Bolton, as to render the cause of death conclusive. A druggist named Gornall, residing at Chorley, deposed that he had sold the prisoner a drachm of tartarized antimony, without affixing a label of "poison," or inquiring what use was about to be made of it.

At Woolwich, a woman who had been in the habit of dosing herself with a quack remedy for rheumatism, was recently deluded by a chemist's assistant into taking some medicine that he compounded in lieu of the required nostrum. The mixture thus supplied (by a man entirely inexperienced and uneducated in the treatment of disease) contained a large portion of colchicum, from an overdose of which the woman died. Of course this was not manslaughter. It was regarded by the jury as "an absence of proper caution," and the

druggist's assistant may, therefore, continue his prescribing unchecked.

The next case occurred a few days ago, at Gateshead. Two drachms of tinct. camph. co. were administered to an old woman of seventy-seven, and caused her death. On the inquest it was stated that the drug had been procured from the shop of a Mrs. Fenwick, who supplied laudanum also, without the slightest restriction as to her sale of such drugs, or the least knowledge of their properties being required of her.

These cases are merely illustrative, and only a few, of many that have recently occurred. But it is evident from these that if any one possesses the taste for experimental poisoning, attributed to the Borgia and to Brinvilliers, it may be indulged with impunity by only opening a shop and serving out deadly drugs broadcast. In all human probability not one of the deaths above cited would have occurred had an efficient Bill been introduced last session to control the indiscriminate sale of poisons, and punish those unconscionable scoundrels who dare to tamper with human life by administering medicines of whose properties they are grossly ignorant, for diseases they know nothing whatever about.

"I HAVE often amused myself," says Dr. Johnson, "with thinking how different a place London is to different people." And, assuredly, it would sadly shock the delicate susceptibilities of Tyburnia and Belgravia, highly-educated daughters of the great city-man, Dives, to learn that the parent whom they daily welcome home to the bosom of his family in his gorgeous West-end home, had been piling up his wealth, and counting over his gains, in the midst of misery and moral degradation, the bare recital of which rather resembles an imaginary description of the horrors of a famine, than a "plain, unvarnished tale" of events and scenes now enacting in the wealthiest city of the world. We extract from a recent report of Dr. Letheby, the able Officer of Health of the City of London, a few of the scenes witnessed by him, and described at a meeting of the Commission of Sewers. In 1989 rooms he found 5791 inmates, belonging to 1576 families. In numerous instances, adults of both sexes, belonging to different families, were lodged in the same room, regardless of all the common decencies of life; three to five men and women, besides children, being ordinarily herded together like brute beasts or savages, all the offices of nature being performed in the most public and offensive manner, and every human instinct of propriety and decency being smothered. He saw grown persons of both sexes, sleeping in common with their parents; brothers and sisters and cousins, and even the casual acquaintances of a day's tramp occupying the same bed of filthy rags or straw; a woman suffering in travail in the midst of males and females of different families teahanting the same room. On visiting a small back room in a narrow passage in the ward of Bishopsgate, he found it

occupied by a man, two women, and two children; whilst stretched out on the bare floor, in the midst of the living, but without shroud or coffin, lay the dead body of a poor girl who had died in childbirth some days before. So close and unwholesome was the atmosphere of some of the rooms visited (redolent of the peculiarly fusty and sickening smell characterizing the filthy haunts of poverty), that Dr. Letheby endeavoured to ascertain, by chemical analysis, whether it did not contain some peculiar product of decomposition, to which might be attributed its foul odour and its rare powers of engendering disease. He found that it was not only deficient in the due proportion of oxygen, but that it contained three times the ordinary amount of carbonic acid; besides a quantity of aqueous vapour, charged with alkaline matter of a most abominably nauseous odour, doubtless the product of putrefaction and of the various foetid and stagnant exhalations polluting the air.

The evils thus graphically depicted are on the increase, nor are their worst effects the production of disease and the perpetuation of fever; for, as Mr. Simon years ago pointed out, "there stalks side by side with pestilence, a yet deadlier presence, blighting the moral existence of a rising population, rendering their hearts hopeless, their acts ruffianly and incestuous, and scattering, while society averts her eye, the retributive seeds of increase, for crime, turbulence, and pauperism." The horrors thus depicted must continue as long as the necessity of erecting homes for the poor as well as stately edifices for the rich, or for the deposit of merchandise (apparently reckoned of more value than human life), is disregarded. There exists in the very midst of all this misery many vacant plots of ground whereon decent habitations might be built for the poor. And yet so callous are the money-seekers, that many of these open spaces have been for years allowed to remain waste, or are advertised to be let to the highest bidder. No city in the world possesses such vast machinery and irresponsible power as that centred in the great trading companies, the rulers of the different wards into which the City is divided, and the mayor and corporation of London. How this power is exercised, and how the moral responsibility it involves is fulfilled, may be learnt from comparing the reports of Mr. Simon with this new chapter of horrors opened by Dr. Letheby. The cost of half a dozen great civic dinners would save the lives of hundreds now dragging out a degraded existence, huddled together in the narrow courts and alleys which disgrace the City of London. Earnestly do we wish that some stern monitor would proclaim this at every civic feast; and that the thought of it may rise, like the skeleton at an Egyptian banquet, to

"Displace the mirth, and break up the good meeting
With most admired disorder."

THE small tradesmen who whip off their shop-aprons to take their seats as worshipful Guardians of the poor, had better remonstrate with

the Board of the Weymouth Union; or those notorious personages will assuredly spoil the favourite sport of the whole body, and deprive parish officials of the inestimable treat they periodically enjoy in loftily patronizing the Union medical officer, and exercising their unaccustomed privilege of badgering and bullying a gentleman and an educated man. The paltry illiberality of that very unpolished board towards Mr. Griffin is well known. Rendered still more presumptuous by the feeble indecision and procrastination of the Poor-law authorities, they took a flight about three months ago, that exceeds even the proverbial temerity of the beggar on horseback, and illustrates forcibly the aphorism of Claudian—"Asperius nihil est humuli cum surgit in altum." They dismissed Mr. Griffin, and entered a minute on their books, describing his language as "insulting and ungentlemanly."

That this statement was simply a piece of gross and vulgar impertinence, it is scarcely necessary to add. But we imagine that even the Poor-law Board, notwithstanding its marvellous inertia, will be roused by such a monstrous absurdity as a county board of guardians, composed of small tradesmen, *et id genus omne*, considering itself a tribunal capable of judging of gentlemanly conduct; its members only proving their claims to the title after the manner of those folks described in Roger Ascham's *Schole master*, "which will needs be gentlemen whether men will or no, have more gentleshipe in their hat than their head, and be at deadly feud with both learning and honestie."

Mr. Griffin has recently addressed a well-written and closely-argued letter to the Poor-law Board, so clearly setting forth the injustice and illiberality of his opponents, that nothing can excuse any further delay in instituting that investigation which he courts, and affording him that measure of justice which is his due.

THAT newly-elected member of the French Academy who, last year, uttered a Philippic against our myriad-minded dramatist, who described Shakspeare as an over-rated man, and seriously alluded to him as the "great Williams," eminently illustrated a kind of comic blundering in which our Gallic neighbors singularly excel. When, in the late Parliamentary discussion on the budget, Mr. Gladstone spun a mesh of words round the Chancellor of the Exchequer, a Paris journal (*Le Constitutionnel*) informed its readers that a member subsequently rose to defend the Lord Chancellor. But blunders such as these fall far short of one which recently appeared in a series of scientific memoirs now publishing at Paris, (*Mémoires Historiques des Célébrités et des Notabilités*.) The life of Mr. Broderip, the naturalist, forms the subject of the particular biography to which we allude. His elation at finding himself celebrated in Paris is delicately surmised; and a faithful and scientific portrait promised to the reader. How he was the son of a medical practitioner is told; his honourable career alluded

to, and the intrepidity and zeal displayed by him during the cholera epidemics faithfully recorded. But in mentioning the scientific works of this accomplished naturalist, his biographer relates that he contributed to the *Quarterly Review* an article on "Le Traité de la Construction des Ponts du Dr. Buckland." We need hardly mention that this essay on the construction of bridges owes its existence to the French author's mode of translating Dr. Buckland's famous "*Bridgewater Treatise*."

HISTORY is silent as to whether those who secretly compassed the death of Richard the Second in the castle of Pontefract subsequently settled in that neighbourhood. If it be true that "a fellow feeling makes us wondrous kind," and if it be allowed that such feeling may be hereditary, then the descendants of those who slew the poor king have thriven well since those days, and have developed into magistrates of the West Riding of Yorkshire. It is difficult to imagine on what other ground than a fine hereditary sympathy with the doers of "deeds of dreadful note" these gentlemen, when they lately met at Pontefract, should have determined that inquests in future be only held after deaths resulting from violence, or when there has been reasonable suspicion of criminal conduct or culpable neglect. In order to more exactly point their meaning, they refused to extend the necessity to cases of sudden death, and a select committee of the wise-acres (with more of the acres than the wisdom) expressed themselves satisfied—probably meaning self-satisfied—that many of the inquests had been held unnecessarily;—all this arising from no more worthy source than a discussion in reference to the amount of coroner's fees. Now, to thus attempt to restrict the action of the coroner is, *pro tanto*, to offer a premium to the poisoner. Let him only do his work with tolerable cunning, that so the victim may appear to have suddenly died, and all inquiry into the matter is forbidden by such a dictum as that of the wise magistrates of the West Riding. But they will probably better understand an argument that appeals to their pockets. A very large sum of money was recently disbursed by the county of Staffordshire for the prosecution of a poisoner who had done his work skilfully; owing to the experience he derived from previous cases which escaped detection. Had a properly-conducted inquest been held on the *first* victim, there is little doubt that the subsequent ones would have escaped, at least a third of the enormous expenses would have been saved, and Palmer would have been equally well hung. Now, the decision of the West Riding magistrates offers a premium to the committal of crimes such as these with far greater impunity. But the detection of one will cost them far more than the fees of coroners at which they cavil with so penny-wise a spirit. We say nothing of the possible sacrifice of human life that this new restriction may give rise to, as in the report of their proceed-

ings there was no mention made of their having at all alluded to this part of the subject. This new attempt to hamper the judgment of a coroner in the discharge of his duties by a sordid restriction, is an act of the grossest injustice; for, as Chapman finely observes,

"There is no danger to a man that knows
What life and death is; there's not any law
Exceeds his knowledge; neither is it lawful
That he should stoop to any other law."

On the 7th of March, at the ripe age of ninety years, Dr. William Yates, of Otsego co., New York, was gathered to the "silent land," where all are brethren;—not as the brethren of this world are, Cains and Abels, Jacobs and Esau. He was one of the few men of note remaining to us from the last generation. A native of England, he studied at St. Bartholomew's; and there attended the first course of lectures delivered by the famous Abernethy. He left this country at the age of twenty-eight; but, before his departure, made the personal acquaintance of Jenner, and received from him a large supply of vaccine virus, with directions for its use. On arriving at Philadelphia, he at once earnestly devoted himself to the introduction of the new doctrine, and was the first who conveyed the knowledge of it to America. He then vaccinated thousands, and gained a large fortune in the honourable exercise of his profession. To the honour of our trans-Atlantic brethren it may be mentioned, that the new doctrine was received with far less cavilling and adopted far more readily than in England.

ELECTION OF NATIONAL ASSOCIATES AT THE ACADEMY OF MEDICINE, PARIS.—M. Bonnet (of Lyons) and M. Scdillot (of Strasburg), both of whom are well known as distinguished provincial surgeons, were, on the 18th inst., elected national associates of the Academy of Medicine of Paris. Our readers may be reminded that the actual members of the Academy are 100 in number, subdivided into eleven sections, under the following designations: 1st, anatomy and physiology, 10 members; 2nd, medicine, 13 members; 3rd, surgery, 10; 4th, therapeutics and medical natural history, 10; 5th, operative surgery, 7; 6th, pathological anatomy, 7; 7th, midwifery, 7; 8th, hygiene, forensic medicine, and medical police, 10; 9th, veterinary medicine, 6; 10th, physics and medical chemistry, 10; 11th, pharmacy, 10. The other members are the following: 1st, free or honorary members, maximum, 10 members, present number, 7; 2nd, national associates or fellows, maximum, 20, present number, 18 (owing to the decease of Dr. Marshall Hall); 4th, national corresponding members, maximum, 100; 5th, foreign corresponding members, maximum, 50. Amongst the foreign associates, we find the following English names: Sir Benjamin Brodie, Mr. Lawrence, Dr. Marshall Hall (deceased), Dr. Simpson (Edinburgh), Mr. Travers.

Miscellaneous Correspondence.*"Audi alteram partem."***THE MARSHALL HALL READY METHOD.***To the Editor of THE LANCET.*

SIR,—I am happy in having been instrumental in adding another to the many instances of success which have attended the splendid discoveries of the late lamented Dr. Marshall Hall.

On July 9th, at a quarter past six P.M., a boy named Fielder Underwood, aged sixteen, while engaged in winding up one of the sluice doors of the Mill Mead Lock, Guildford, fell into the water above the lock. His lower extremities as far up as his hips were carried by the force of the stream under the sluice door, which descended upon the hips, and held the body completely submerged at a depth of from four to five feet of water for a period of from seven to eight minutes. The time of submersion was carefully ascertained, and distinctly proved by the evidence of the persons who were present at the accident, and confirmed by calculation of the time necessarily occupied in obtaining handles for the lock and other means necessary for the recovery of the body. A man who was on the opposite side of the canal saw the boy fall in, and ran a distance of sixty yards to get to him, and succeeded in getting hold of the boy's hand, but could not release him, in consequence of the great pressure of water, which kept the body firmly jammed under the door. The man ran to a house at a distance of 200 yards for a handle to wind up the sluice door of the other side, in order to take off the pressure by filling the lock. He returned with the handle, and in throwing it across the canal to another person, it fell in the water, and was lost. Another handle was sought for, and obtained at a mill 150 yards off, and with it the sluice door of the opposite side was wound up and the lock filled. Grappling hooks were obtained, and after the handle was applied to wind up the sluice door, which the boy was under, he was removed from the water. It takes three minutes and a half to fill the lock when both sluice doors are open. I arrived on the spot immediately after he was removed from the water. The surface of the body felt cold; the lips and cheeks blanched; the heart's action imperceptible; no signs of respiration. The body was to all appearance inanimate, lifeless; the muscles were relaxed. I immediately obtained the assistance of some of the persons who were present, and commenced operating according to the rules of the "Marshall Hall Method" on the spot, and within fifteen yards of where he was taken out of the water. After the pronation and rotation had been proceeded with for from five to seven minutes, he gave the first gasp or inspiration, the next in about half a minute, and about once in every four or six turns for the next twenty minutes. At the end of thirty-five minutes he could breathe

without my assistance, and the pulse could be felt at the wrist, but pulsation was felt in the femoral artery in Scarpa's triangle some minutes earlier than at the wrist. He was wrapped up in a blanket and conveyed home. He was still unconscious, and remained so till five o'clock the following morning. The surface of the body, and more especially of the lower extremities, kept cold till nine P.M., when excessive reaction became apparent, and the surface of the body became intensely hot; the pulse increased in force and frequency; the breathing very much oppressed, and 52 per minute. He did not swallow anything till midnight, when he took a teaspoonful of warm tea, and remarked that it was too sweet, and then resumed his state of unconsciousness. On the day following he was conscious, but could not remember any circumstance which occurred to himself for an hour or more previous to the occurrence of the accident. He required attendance till the 13th, as he suffered with dyspnoea and symptoms very much like acute bronchitis.

I am, Sir, your obedient servant,

EDWARD COOK.

Guildford, August, 1857.

THE MARSHALL HALL METHOD OF TREATMENT IN ASPHYXIA.*To the Editor of THE LANCET.*

SIR,—Permit me to avail myself of a short space in your interesting journal, to record my testimony to the advantage of the "Marshall Hall Method," as exemplified in a case that came under my care on Friday, April 24th, in which I succeeded in producing the process of respiration, contrary to my expectation. I believe the old modes of proceeding would have been entirely fruitless in bringing about such a consummation, *ceteris paribus*.

Mrs. G——, residing at New Luton, was seized with labour-pains on the morning of the above date. I saw her at about ten A.M., and found the uterus dilated to such an extent as to necessitate my continuance with her: the pains were, however, inefficient, and, having made no progress for several hours, at about three P.M., I gave her a small dose of ergot, soon after which strong expulsive pains came on, and in half an hour a large full-grown child was extruded, fully ten minutes having intervened between the expulsion of the head and the shoulder. The funis was coiled round the left wrist, and the right ankle; it was flaccid, and ceased to pulsate. The placenta was immediately expelled. Having completed my attendance upon the mother, I hurried to adopt the "Marshall Hall Method" with the infant. The face and extremities were of a dark-blue colour, and a frothy mucus oozed from the mouth and nostrils. After about five minutes' rolling and rubbing, *secundum artem*, I perceived the colour of the chest alter from blue to red; in a short time there was a very faint and feeble inspira-

tion, followed by a most languid cry. Continuing the movements for a few minutes longer, until respiration was completely established, I desisted only when I found the young stranger give unmistakable evidence, by a lusty shout, of his determination to enter the lists in "the battle of life."

In October, last year, a footling case, almost similar in its details to the one published in *THE LANCET* of April 25th, by Mr. Cowan, came under my observation, and my want of acquaintance with this newly-introduced anti-Malthusian boon, is doubtless a reason why one of the finest and strongest infants I have ever seen is not now numbered with the living.

All honour, then, to that philosophic mind that has educed from the stores of its profound intelligence, this most important discovery, the influence of which will diffuse itself over unborn thousands—it may be millions—of the human race! I feel that the claims of Dr. Marshall Hall are deserving of the highest honour that can be conferred upon one of the greatest benefactors of the medical profession, and of whom it may be said, "*Nihil tetigit quod non ornavit.*"

I am, Sir, very faithfully yours,

P. J. HYNES, M.D.

Nottingham, June, 1867.

To the Editor of THE LANCET.

SIR,—A short time ago I was called to Mrs. G——, the messenger stating that the child was born. On my way to the house I was further informed that the child was dead. I found the mother standing on the floor, supported by attendants, and fixed to the spot (the placenta not having come away) by the umbilical cord. The child lay coiled up at the bottom of a large *pôti-de-chambre*. I immediately released and attended to the mother. On examining the child, it was to all appearance dead. This was so much the impression that it was considered an useless attempt to endeavour to resuscitate it. I nevertheless adopted the method recommended by Dr. Marshall Hall, and in half an hour respiration became established, and the child lived.

In connexion with this subject, I would venture to remark that most of us must have observed, amongst those who have the care of children, that when their little charges present, from any cause, symptoms of suffocation, they are in the habit of throwing them across their arms, or placing them in their laps, in the prone position, then rolling them to and fro and slapping their backs, generally with good effect. The essential part of this treatment is similar to the Ready Method, and, it appears to me, assists in establishing the soundness of Dr. Marshall Hall's views, and in showing that we are indebted to him for basing on scientific grounds a means empirically employed, and above all for giving those means a wider application.

I remain, Sir, your very obedient servant,

HENRY MADGE, M.D.

Howland-street, Fitzroy-square, 1867.

To the Editor of THE LANCET.

SIR,—As the Committee of Management of the Royal National Life-boat Institution appealed to the readers of *THE LANCET* for "such individual or collective information as the profession may be able to afford" with regard to the "Marshall Hall Method" in the treatment of persons apparently drowned, I beg to send you the following case. Although the result was not so fortunate as in my former case, yet it may be useful to place it on record, as it illustrates strongly the danger that attends the removal of the patient, and the use of the warm-bath, as *still* recommended by the Royal Humane Society in their amended (?) rules.

I was summoned on the evening of the 24th of May to see a boy, five years of age, supposed to be drowned. About ten minutes before my visit he had been taken out of a pond. His lower extremities were in hot water, and hot wet blankets were being applied over his body, which was quite flaccid; his face and lips very livid; tongue slightly protruding, and a little frothy mucus around the nostrils; neither respiration nor pulse discernible. He was carried to the door immediately, and treated by the "Marshall Hall Method." I began the movements, &c., at eight p. m., and continued them steadily for twenty-five minutes, when Mr. Young, another medical man arrived, and with his able assistance efforts were persevered in till five minutes past nine. It then became so dark that we considered it excusable to give up, especially as no symptoms of life had appeared.

I ascertained subsequently that the little fellow had been in the pond between fifteen and twenty minutes; that his father took him out; that he "gave two little gasps" at the side of it; that he was immediately carried home (about one hundred yards) and placed where I saw him. In fact, had the poor boy's father been acting under the immediate superintendence of the Royal Humane Society's committee, he could have done no better for his child. To those only who can fully understand the value of minutes in such a case will it appear as almost certain that life would have been restored by the Ready Method if it had been brought into operation, when the child gasped at the side of the pond.

Here, then, is a striking instance of a life lost by ten minutes' delay. "The other methods occupied but a few minutes;" in the meanwhile, however, death had snatched his victim. The result is one more warning to the Royal Humane Society to substitute "*postural movements on the spot*" for removal and the warm-bath, as speedily as possible, unless they are content to have the "*NOMEN et prater ea nihil.*"

I remain, Sir, your obedient servant,

A. LEGAT, M.D.

South Shields, July, 1867.

PRESERVATION OF VACCINE LYMPH.

To the Editor of THE LANCET.

SIR,—I have the pleasure to send you the accompanying contribution, regarding the preservation of vaccine lymph, for insertion in the columns of THE LANCET.

The lymph kept as described during two years, during two south-west monsoons, is as good as the day it was taken, succeeding in every case, and producing as genuine a pustule as ever I saw in England.

It is evident that lymph preserved in this way will keep for hundreds or thousand of years, provided the bottle is a good thick one, and varnished, and the stopper (cork) air-tight.

I remain, Sir, yours faithfully,
W. B. MAXWELL, M. I.,
Superintending Surgeon.

Cannanore, July, 1887.

I. To Preserve Vaccine Lymph for any Length of Time in all Climates.

The method described below has been adopted successfully, for several years, by myself, and I beg to make the same known to medical officers, subordinates, and vaccinators.

1. The lymph, clear, and without opacity, is to be put on clean glasses without any wax. When thoroughly dried, the two glasses are to be secured in a clean dry paper.

N. B. The lymph will dry sooner if put in three or four different portions on the same glass, and the other glass will then rest firmly and without breaking when tied.

2. The packet (with the date and place, &c., on it) is then to be kept in a wide-mouthed bottle, which is to be one-half or three-quarters filled with fresh-burnt lime in coarse powder or pieces.

3. The stopper should be made air-tight with thin paper.

4. When a packet of lymph is required to be sent to a distance, it should be enveloped in a little powdered fresh-burnt lime, and secured in paper, and then inclosed in wax cloth in the usual way.

II. To Moisten the Lymph for Vaccinating.

1. Success in vaccinating will depend a good deal on the careful manner in which the lymph is moistened.

2. The glass should be placed on an inverted cup or wineglass, this placed on a plate containing warm water, (120° F.), and the whole covered with a clean cold tumbler or finger-glass.

3. A few minutes will suffice to moisten the lymph. If required, however, a little of the moisture on the edge of the tumbler can be taken on the point of the lancet, and the lymph can be made more moist.

III. Method of Puncturing.

1. The puncture is made from above downwards, in form of the letter U or V.

2. And a little nearer the inside of the arm than usual.

3. If the puncture bleeds, or discharges more than anticipated, it is allowed to do so before the lymph is introduced.

4. The puncture made in this way does not allow the lymph to escape, but supports and retains it, thus insuring its almost constant success.

THE ADVERTISING QUACK GANG.

To the Editor of THE LANCET.

SIR,—A patient of mine, holding a most responsible situation in the City, was one day at Kahn's museum, and after hearing the lecture and witnessing the disgusting and filthy preparations of venereal disease, was induced, at the suggestion of a friend (are not these hired friends?) to consult the assumed Dr. Kahn, who lives up a staircase at the back of the premises, or at all events consults there with his victims. |

The first demand made when he entered the den was a guinea, by a whiskered, fierce, brutal-looking fellow. "Show me," he exclaimed in a gruff voice, "what is the matter. Sir, you are p— up to the eyes! you will lose your nose, throat, and be eaten up, unless you take my medicine! Where do you live? have you £20 in your pocket—if not, a cheque-book? I must have £20 before I do anything. Come to my private residence to-morrow (Sunday) morning, and bring the money, or you will be eaten up!" and such-like expressions.

Fortunately, better judgment prevailed with this young man when he got into the fresh air, and the intimidation of the moment passed. On his way home he called upon me. Now all he had the matter with him was a slight excoriation, and not the slightest appearance of venereal disorder.

I wonder that *The Times*, which has hitherto set such a noble example to the newspaper press, should daily insert advertisements from this unmitigated mountebank and quack. Surely the Editor knows not how many young men are ruined in purse and constitution at this museum, outwardly resembling an exposition of God's creative power, but inwardly devoted to the vilest purposes; where the quack appeals to the evidences of disease previously exhibited as a finale to an inert complaint, and assures victim after victim that he alone can prevent, by heavy sums of money-payment, the consequences of the disorder. If the man appeals to his poverty, and says he cannot put down the money demanded, or lay up in secret to take his specific for months, —then comes the threat of exposure, if married, to the wife; or, if single, to employers, and the deluded has no other resource but to raise the

money from friends, and satisfy the fiend by golden deposits.

Nor is Kahn the only one who plies his trade in this way. He is a bolder trader in secret maladies, and, assisted—unconsciously, I firmly believe—by the press and advertising companies, who placard him everywhere, drives a trade which has seldom been equalled by any of the craft.

I am, Sir, yours very truly,
ALFRED EBSWORTH, M.R.C.S.

Trinity-street, August, 1887.

POSITION OF MILITIA SURGEONS.

To the Editor of THE LANCET.

SIR,—As you have heretofore, with your usual ability, advocated the cause of the army surgeons, and knowing that your columns are always open to the correction of wrong impressions, I venture to request that you will accord to the militia surgeons a little courtesy by publishing the following observations:—

On Tuesday night week, when the militia estimates were brought before the House of Commons, Sir J. Ramsden, in answer to a question put by Col. North to the Government, as to whether they "had arrived at any decision with regard to a memorial which had been addressed to the War Department by the surgeons connected with militia regiments," stated, "that all the information he had been able to obtain showed the present position of a militia surgeon to be one that was much coveted," not only from the allowance received, but that in many instances "it had proved the *very best* introduction to private practice."

Now, a more absurd fallacy was never uttered in the House of Commons, as the office, instead of being useful as an introduction, had deprived many surgeons of all their previous practice, and most of those who had to leave their residences with their regiments had been unable to recover their lost ground on their return home, and to my own knowledge several of my brethren since their return to their former sphere of practice have been requested by their patients, before being again employed, to pledge themselves that in the event of their services being again required, they would state whether they were prepared to resign their appointments or not.

By inserting the above you will greatly oblige, Sir,

Your obedient servant,
THE PRESIDENT OF THE MILITIA SURGEONS'
MEDICAL SOCIETY.

August, 1887.

THE APPLICATION OF CHROMIC ACID TO WARTS.

To the Editor of THE LANCET.

John S—, aged nineteen, applied to me on

April 12th, to be relieved of a warty growth affecting his nose and upper lip. The mass chiefly occupied the spaces at the sides of the alæ nasi, reaching down on the upper lip, and curling in towards the nostrils. It consisted of ragged ridges, with many deep clefts, and had been growing for six months. I applied a solution of chromic acid, of the strength recommended by Mr. Marshall (100 grains to a fluid ounce of distilled water), freely over and between the ridges, the growth assuming a yellow colour. The pain was scarcely complained of. A lead lotion was ordered to be applied night and morning. No dressing of any kind was used. He was to return in four days.

April 16th.—Much improved. One-half of the crop has disappeared, having dropped off; the surrounding skin was unaffected. He has had no pain whatever. Solution again applied.

20th.—Only some small portions remain on the left side, which were dealt with as before. A little of the solution which spread over the healthy skin was *not* wiped off.

24th.—Cured. The portion of skin touched by the solution has not been affected by it.

The entire removal of this growth without pain or inconvenience, the rapidity of the cure, and the safety of the remedy, show chromic acid to be a useful escharotic. I am glad to think that Mr. Marshall is to give us the result of his trials with it in other affections.

I am, Sir, your obedient servant,
ANDREW KEY, M.D., Edin.

Arbroath, 1887.

EFFECTS OF MENTAL EMOTION ON THE FŒTUS.

To the Editor of THE LANCET.

SIR,—The following case may interest those members of the profession who doubt whether the fœtus is affected by mental emotions of its parent to such an extent as to produce organic peculiarities:—

Mr. E—, aged sixty, presents a peculiarity of the irides, noticed by me during my attendance on him for an attack of acute rheumatism. The irides are prolonged downwards and outwards. His sight is particularly strong in the dark. The cause is ascribed by him, on the authority of his mother, to her having, when pregnant, been startled by the staring eyes of a cat suddenly affecting her nerves on entering a room at dusk. Mr. E— adds, that when a child he was separated from his mother, and continued absent till he arrived at manhood. On coming into her presence again, her only knowledge of his identity was the peculiarity above related.

I am, Sir, faithfully yours,
E. P. WILKINS, M.C.R.S.

Newport, Isle of Wight.

A TABLE OF SURGICAL OPERATIONS PERFORMED AT THE CIVIL HOSPITAL, COMBACONUM, FROM JAN. 1855 TO DEC. 1856.

By J. M. JOSEPH, M.D., C.M.,
SURGEON TO THE HOSPITAL.

(Communicated by P. S. MOOTOOSAWMY MOODELLY, Graduate of the Madras Medical College; Native Surgeon, Combacconum.)

Nature of the Operations.	No. performed.	Cured.	Relieved.	Died.	Remarks.
Amputation of thigh....	4	3	—	1	
" leg.....	7	6	—	1	
" arm.....	3	3	—	—	
" toe.....	1	1	—	—	
" finger....	2	2	—	—	
" thumb....	1	1	—	—	
" penis....	11	11	—	—	
Ovariectomy	3	2	—	1	Both patients are alive and in perfect health.
Lithotomy.....	2	2	—	—	
Removal of tumours....	71	71	—	—	Of all sizes, from 2 dr. to 50 lb.
Cataract extracted.....	9	7	2	—	
Hydrocele.....	104	103	1	—	
Tracheotomy.....	1	—	—	1	
Paracentesis abdominis.	7	—	5	2	
" capitis....	1	—	1	—	
Phymosis	32	32	—	—	
Condylomata around } the vulva.....	1	1	—	—	
Polypus nasi.....	4	4	—	—	
" in the right ear	1	1	—	—	
Encanthion.....	1	1	—	—	
Epulis.....	3	3	—	—	
Abcess in lower extre-	1	1	—	—	Discharged by the trephine.
mity of the tibia....	—	—	—	—	
Strabismus (convergent).	2	2	—	—	
Neuroma.....	2	2	—	—	
Hypertrophy of scrotum.	1	—	—	1	
Scurrhous of the prepuce.	1	1	—	—	
Hernia (strangulated)...	1	1	—	—	
Pterygium	2	2	—	—	
Fistula in ano.....	6	6	—	—	
Division of stricture of } urethra from without }	3	3	—	—	
Hæmorrhoids (external).	4	4	—	—	
Cancer of the lower lip..	2	2	—	—	
Necrosis of the tibia....	1	1	—	—	
Ranula	3	3	—	—	
Hypertrophy of the } skin of the penis.... }	1	1	—	—	
Urethral calculi re-	1	1	—	—	Two large cal-
moved from mem-	—	—	—	—	culi extracted.
branous portion of } urethra by excision. }	—	—	—	—	
Left eye extirpated for } malignant disease... }	1	1	—	—	Disease return-
	—	—	—	—	ed 8 months
	—	—	—	—	after opera-
	—	—	—	—	tion.
Removal of $\frac{1}{2}$ of the } lower jaw..... }	1	—	—	1	Nine days after
	—	—	—	—	the operation.
Total.....	302	285	9	8	

PROCESS FOR THE DETECTION OF IODINE IN AQUEOUS SOLUTIONS.

To the Editor of THE LANCET.

SIR,—I send you an account of the process I employ for the detection of small quantities of free iodine in aqueous solutions. The method has not, to my knowledge, been pointed out by any one but myself, I should therefore feel obliged if you would allow your journal to be the medium for giving it publicity.

If water (or almost any aqueous fluid) holding free iodine in solution is agitated in a glass tube for a few seconds with a small quantity of chloroform, and then left to itself, the chloroform when it subsides, will be found to have acquired a beautiful violet colour (more or less intense, according to the quantity of iodine present), which is due to its holding in solution all the iodine which the liquid contained. This test is highly characteristic of iodine, and its appearance will often be considered a sufficiently sure indication of the presence of that substance; but if further proof is required, then separate the chloroform by means of a small pipette, pour it into a small white saucer the bottom of which has been previously smeared with starch paste, and leave it to evaporate spontaneously. As it disappears, a distinct film of iodide of starch will be produced if the merest trace of iodine was present.

When this method is employed to detect iodine in an aqueous solution containing iodide of potassium, it is necessary to decompose nearly the whole of that salt before adding the chloroform; for if much of it is allowed to remain in the solution, very little iodine will be carried down by the chloroform; for an aqueous solution of iodide of potassium acts as a powerful solvent on free iodine.

I am, Sir, your obedient servant,

DAVID LINDO.

Falmouth, Jamaica, May, 1857.

HEREDITARY FORMATIONS.

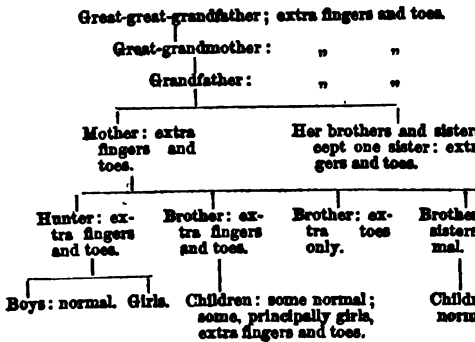
To the Editor of THE LANCET.

SIR,—The repetition of the parental type through succeeding generations is not often so decidedly manifested as in the case I subjoin, which came under my notice lately.

There is, in Woolwich, a family of the name of Hunter, consisting of an old woman, her son, and his wife and children. The old woman tells me that her father, her grandmother, and her great-grandfather, were all born with an extra finger on each hand, and an extra toe on each foot; but she cannot say whether any other members of the family in those generations presented similar peculiarities. All her brothers and sisters, with the exception of one sister, had the same additional members. Hunter himself was born with them; all his daughters, three in number, have them; the boys have not. Of his relations, one brother is similarly formed; one brother has only the six toes, his fingers being

normal in number; and another brother and all his sisters, with their children, present no peculiarity at all. Some of the children, boys and girls, of the second brother, resemble their father in this respect, and some do not. Through six generations, and possibly through many more, has this redundancy of parts been presented; and it appears that there is a disposition for it to appear in alternating sexes.

The following table will render the matter more intelligible:—



From the cicatrices where the extra fingers have been removed, and from the fingers themselves where they still remain, it seems that they are mere adjuncts, devoid of bony or articular connexion; but the toes are articulated.

I am, Sir, your obedient servant,

E. COOPER WILLIS.

Plumstead, August, 1857.

THE "MARSHALL HALL METHOD" IN THE TREATMENT OF ASPHYXIA.

[We have been requested to publish the following letter, which was sent to the lamented Dr. Marshall Hall.]

(COPY.)

Sunderland, July 31, 1857.

DEAR SIR,—Permit me to state that I had the good fortune to be at Tynemouth on Sunday last, when a young man, named Jacob C—, was seen to sink twice, in the offing.

A person named Grove and I swam to his rescue and brought him to the shore, to all appearance dead. The spectators, 500 in number, suggested that he should be taken to some house in the village; but as I had had a number of similar cases through my hands, I insisted on treating him on the spot.

Having received and read your proposed method of treatment of drowned persons, in the July number of the *National Life-Boat Institution's Journal*, I was determined to pursue your proposed method, though I had but little hope of restoring life. However, I persevered, and in about half an hour I had the satisfaction to see animation returning to the apparently drowned man.

Now, my dear Sir, whatever praise the public may have awarded to Grove and myself, for rescuing C— from the water, to you, Sir, alone, ought the praise to be given; for had I not been

aware of your invaluable method, this man would have been lost to his friends and to society for ever.

Hoping that you will accept this humble testimonial, which I tender with all due respect,

I have the honour to be, dear Sir, yours, &c.,

JOSEPH R. HODGSON,
(Carver.)

Marshall Hall, M.D.

NEW THEORY OF RACE.

ORIEL V. SAXON.

By ROBERT KNOX, M.D.

To the Editor of THE LANCET.

SIR,—In the *New York Journal of Medicine* for January, 1857, I find a brief notice of a memoir read by Dr. McElheran to the New York Academy of Medicine; and in the same number, what seems to me an extended outline of the memoir itself. As the memoir attracted considerable attention, which from its ingenuity it no doubt well merits, I have taken the liberty of requesting you to have the kindness to permit me to make a few remarks on that memoir in the columns of your journal, this being the readiest way of making my remarks known to all those at least who read the English language.

I learn from the notice, that a few years ago, Dr. McElheran called the attention of the British public to his theory of race, and more especially to that portion of it which places the Celtic race above all others; which regards them as the type of humanity, and which, as a consequence of the antithesis of character and attributes, moral and physical, assigns to the Saxon race, wherever found, an infinitely lower place in the human scale, making out the race to be the outer rind of humanity, as Dr. McElheran, with native Celtic eloquence, expresses it. To me he assigns the merit, or demerit, of having ascribed to the Saxon the highest qualities of the human family; to the Celt the lowest, confining the view of course to the fair races of mankind.

When I published my work on "The Races of Men," to which I believe we owe all the ethnological inquiries and speculations that have since appeared, I stated in the preface to that work that most of the races of men, "would probably admit, that as regards the race to which they themselves belonged, I was entirely in the wrong, but that, in respect of other races, my views were unassailable." Now this is precisely what has happened. I have never yet met a Saxon man, no matter of what nation, who did not admit frankly that I had described the Celtic race to the life—by whatever name they were known, French, Welsh, Irish, Caledonian. On the other hand, in the hasty sketch of the Saxon, contained in the same work, the Celtic writers have generally admitted that I had placed before the nations, graphically and truly, the principal traits of the Saxon character and form. But Dr. McElheran, in the memoir I have alluded to, from not having

read my work with sufficient care, thinks that I have, 1st, ascribed to the Saxon qualities which they have not; 2ndly, that I have denied to the Celt a pre-eminence to which he, as a Celt, thinks them fully entitled; 3rdly, that I have led the whole world into error, and especially the world of the United States of America, by inducing them to imagine that they are the descendants of Saxons instead of Celts; that they are Anglo-Saxons, instead of being, as he thinks they are, a Celtic race. Dr. McElheran's remark, in respect of the last proposition, is, "his friend and teacher, Dr. Knox, although merely theorizing, had inculcated our whole scientific and public press with Anglomania;" meaning, I presume, thereby, an overweening idea of the abilities of Saxon men.

The proposition as to the Celtic origin of the United States men may be safely left to the consideration of the United States men themselves. If Dr. McElheran will do me the favour to re-peruse the part of my work which treats of the modification of the Saxon character on the American soil, he will, I think, find therein abundance of reasons for coming to the same conclusion I did—namely, that the great majority of United States men are descendants of Saxons. That Celts abound also in North America I am well aware; there is no mistaking the race. Many years ago, I ventured to foretell that the two races would quarrel; they have done so repeatedly since that prediction, and the final contest for supremacy between the two races on that continent cannot long be delayed.

As to the second proposition, that I have denied to the Celt qualities which he possesses, I feel assured that I have not done so; Mr. Shiel himself admitted that I had described the Celtic character most accurately. The history of the race is before the world; so also is that of the Saxon, to those at least who can read it aright. Races of men never change, never alter, any more than races of any other animal. As the Celt was 4000 years ago, so is he now. The Jew has never altered, nor any other race known to me. It is quite natural for a Celt or for a Jew to claim for men of his race, as Mr. B. D'Israeli has done, all the men of genius the world has seen—and women too—from Napoleon the Great to Madame Grisi; but I trust it is not necessary for me, as a scientific man, writing about the races of men, to refute such romances. In like manner, Dr. McElheran claims for that race to which he himself belongs nearly all that the United States have yet produced of sterling ability—Washington, namely, and Jackson, Clay, Webster, Taylor, &c. But these are not Celtic names, and I have yet to learn that they were men of genius.

The writers of the work on Ancient British Ethnology, gentlemen unknown to me, have frankly admitted my view of the Saxon and Celtic races to be the correct one. I was the first to point out the marks of physical degeneration in the Saxon race located on the American conti-

nent, and to foretell the fate which awaits it in common with all other races who have attempted the colonization of a continent to which they did not originally belong—namely, ultimate extinction. These views, strongly contested and denied at first, now make great progress, and begin to be very generally admitted. Nor was the real character of the Celt and Saxon rightly understood even in this country, until I called the attention of the reading world to the facts of observation and of history. Before these facts were placed before the public, errors innumerable prevailed, not merely as regards the races I now speak of, but of most others. The Franks, Goths, and Slavonians were confounded with the true Scandinavian, or generally understood to be extinct. The Jews were thought to be inventive, literary, artistic, and civilized! The Saxons were imagined to be a frank, straightforward, peaceable race, poor hands at diplomacy, and not given to quarrel with their neighbours!—neither boasters nor bullies, nor adepts at rhodomontade! When Dr. McElheran claims for the Celtic race the population of the United States of America, the men who followed Washington and Jackson, Taylor and Scott, and who in a very few years have "*progressed*" from Maine to Mexico, I point to the undoubted Celtic inhabitants of Lower Canada, the Louis Quatorze men who still vegetate there, and leave the contrast to himself. To the race to which my friend and former student, Dr. McElheran, belongs, I have assigned many of the noblest qualities which adorn humanity, such as generosity and gentleness, warmth of heart, frankness, a high sense of honour, good taste, and a love of art, science, and literature; warlike perhaps beyond all other races, their great deeds were never surpassed in human history; *ceteris paribus*, the Celt is perhaps the strongest of men. But when I am asked to ascribe to the Celtic race those qualities, negative and positive, which characterize, and have ever characterized, Saxon or Scandinavian men only, as the historian of race, uninfluenced by and regardless of nationality, I must decline doing so regardless of the offence it may give to nations or individuals. The Saxon or Scandinavian race of men are peculiarly the *men of progress*—not in art, for no race stands lower—not in literature, this they look on with pity—not in science, for this they despise, and for men of genius they have a deep aversion and dislike, as a consequence of the boundless self-sufficiency forming the leading feature in the Saxon character; but in that progress which men most esteem, the acquisition of power and wealth, of the means for social comfort—that state of affluence which with them forms the *beau ideal* of national glory and individual happiness, and which in their eyes constitutes the highest form of civilization. Whilst the Celt *talks*, the Saxon *acts*. The Celt proclaims what he is about to do, and musters and marshals a large and well-organized army to end in—nothing; to effect—nothing. If he overcomes an enemy, he forgets, as Marshal D'Isly did in Morocco, the very object of his expedition. If

the Marshal had been but a very ordinary blunder-headed Saxon, he would, on the day after the battle of Islay, have marched on Fez, seized the capital of the kingdom, dictated his terms (including a large slice of territory, with a fortified sea-port or two), recovered all the expenses of the war before he moved from the spot, and, whilst returning, would have picked a quarrel with the enemy, wheeled rapidly on his steps, and annexed the kingdom to the French empire. This would have been the conduct of a Saxon man under such circumstances. The Saxon *acts*: he never makes war without an object, and that object is spoil, aggrandizement, annexation of territory. A few years ago, Britain waged a war of extermination with a few tribes of savages in Southern Africa. It cost the country a sum not far short of three millions, being somewhat more than a thousand times the value of the disputed territory. But no Englishman, no English *merchant* (that is the word), ever complained of that expenditure, or of that war; on the contrary, the cry was "Why don't they (the Government) send out at once twenty thousand men and exterminate the savage beasts!"—meaning the men who were fighting for their lives, liberties, and native land! The continental nations do not yet quite understand the Anglo-Saxon; and yet America, India, Africa, and the late war, to which may be added the present "appeal to the country," ought to have opened their eyes long ere this. Whilst the head of all the Celtic nations—France—was sending a small army to maintain the Pope in his rickety Moorish chair, England at that moment in the East seized on and annexed to her Indian empire five large monarchies. A member of the Privy Council of England coolly proposed to the Council, a few years ago, to annex Southern Africa as far as the Equator, to the British crown! The proposal no doubt, but for the French, would have been accepted, and acted on; but the French revolution which hurled Louis Philippe from his throne had just broken out, and alarmed England deeply; it was judged therefore imprudent to send an army to South Africa, when we might want it in South England. The opportunity had not arrived, and so a truce was patched up with Pretorius and his barbarian boors; the time had not yet arrived when an act of enormous spoliation, the seizure of the continent of Africa, could be perpetrated, which commercial England meditates with some appearance of decency, and without scandal; for as deep hypocrisy is the great trait of the race, everything must be done *with propriety*. But the train has been laid, and the net woven, which is to entangle the African continent. Burton assails it at Mombas, on the east; Livingston has already traversed it, too far to the south it is true, but still has made a good beginning. The Dutch Boor (a Saxon of the purest water) rides on in front, shooting down the natives, hunting them as men do wild beasts, and enslaving the children. By-and-bye the Anglo-Saxon must, for humanity's sake, as Dr. Croly would say, interfere—that is, defeat the Dutch

Boor, which will not be a difficult matter for the might of England, extinguish their transvaal republic, and annex Southern Africa, as far as the equator at least, to the British crown. This is the way the Saxons proceed.

Whilst I now write, I observe that an army of 25,000 Frenchmen, Celtic men, have been ordered against the Kabyle: 500 Dutch Boors, with their long guns, large cloaks (to conceal the swords and guns), wagons, oxen, and some bales of cotton goods as a mask, a decoy, and a pretence, would do the work much better, and at no expense. But the labour-hating Celt cannot be made to understand this, and probably never will. Besides, he has some sympathies for the dark races, which the thoroughbred go-ahead Saxon has long since shaken off. The *labor improbus*, which overcomes all things, and which the Celt abhors, the Saxon thinks nothing of, *so long as it pays*. Against the theory that the modern United States man is of Celtic race, I offer—1st, his physical structure; 2nd, his temper; 3rd, his progress; 4th, the form assumed by his religious belief; 5th, his laws and government. Try a *coup d'état*, a 2nd of December, in New York or London. It answers very well in Paris, and would succeed in Dublin, were Ireland under a Celtic government, but never with a Saxon race of men.

Allow me to conclude this note, already too long, by quoting from my work on "The Races of Men" a few remarks on the Saxon and Celtic races. Of the Celtic race I have said:—"War is the game for which the Celt is made; therein is the *forte* of his physical and moral character. In stature and weight, *as a race*, inferior to the Saxon; limbs muscular and vigorous; torso and arms seldom attaining any large development (hence the extreme rarity of athletes amongst the race); hands broad, fingers squared at the points; step elastic and springy; in muscular energy and rapidity of action surpassing all other European races. *Casteris paribus*, he is the strongest of men. His natural weapon is the sword, which he ought not to have abandoned for any other. Jealous on the point of honour, his self-respect is extreme, admitting of no practical jokes; an admirer of beauty of form and of colour, and therefore a liberal patron of the fine arts. Inventive, imaginative, he leads the fashions all over the world. Most new inventions and discoveries in the arts may be traced to him; they are then appropriated by the Saxon race, who apply them to useful purposes. In literature and science they follow method, and go up uniformly to a principle; in the ordinary affairs of life they despise order, economy, cleanliness; of to-morrow they take no thought. The race is not more courageous than other races, but they are more warlike. Irascible, warm-hearted, full of deep sympathies, dreamers on the past, uncertain, treacherous (they betrayed Napoleon!) gallant, and brave. In France you have the civilized Celt, with all the modifications which the pressure of a strong government can force upon him. To see him as Nature made him, you must go to Ireland, to Wales, to Caledonia. Children

of the mist, even in the clear broad sunshine of noonday, they dream of the past; Nature's antiquaries as looking on the darkening future, which they neither care for nor long to scan, by the banks of the noble Shannon, or listening to the wild roar of the Ocean as it breaks on the Gizzeny Brigg, washing the sandy skirts of the Morroch More, listlessly wandering by the dark and stormy coast of Dorroch, gaunt famine behind them, no hopes of to-morrow, cast loose from the miserable patch he held from his ancestry, the dreamy Celt, the seer of second sight, still clinging to the past, exclaims, at his parting moment from the horrid land of his birth, 'We'll may be return to Lochaber no more.'

"And why should you return, miserable and wretched man, to the dark and filthy hovel you never sought to purify? To the scanty patch of ground on which you vegetated? Is this civilization? Was it for this man was created? Chroniclers of events blame your religion;* it is your race. Why cling to the patch of ground with such pertinacity? I will tell you: you have no self-confidence, no innate courage to meet the forest or the desert; without a leader you feel that you are lost. Now, turn to the self-confident Saxon, the man of unbounded self-esteem. Does he fear to quit the land of his birth? Not in the least; he cares for it not one straw. Landing in America, he becomes a real American, a Kentuckian, a Virginian, a furious democrat. In Oceania he becomes a native Tasmanian; in South Africa, an Africaner. Holland and England are nothing to him; he has forgot for ever the land of his forefathers, and for a consideration will fight to the death with his own brethren. For Celtic men cling together in towns and hamlets by river sides; the lone Saxon, on the contrary, will not build his house within sight of his neighbour's if he can avoid it. With him all is order, wealth, comfort; with you reign disorder, riot, destruction, waste. How tender are the feelings of the Celtic woman! how soft and gentle is her nature! her tears flow at every tale of distress; her children are in rags."†

Whilst I now write, Anglo-Saxon England is giving a lesson to some of her representatives, explaining to them the "character of the race." Sham philanthropy is at all times well received in England; sham meetings in favour of the Poles and Huns, Neapolitans, Caffres, Negroes, and Vandois; but *no action* can be allowed which interferes with the high destinies of England—and her commercial prosperity. Saxon sympathies are very peculiar, and can only be comprehended by those who have studied the intrinsic nature of the race.

I shall not trouble the readers of *THE LANCET* with an examination of Dr. M'Elheran's theory of a Celtic centre; of the inferiority he ascribes to the Gothic races, and especially to that "outer rind of humanity" the carnivorous Saxon; nor of

his classification of the races of men into "omnivorous, herbivorous, and carnivorous." He believes that the present United States men are descended from the Celtic south and west of England, from Spain, France, and Belgium. That a true Belgic population—a monarchy-loving, priest-ridden race—still occupies the south of England I admit; but the Belgians, or Flemings, never were a pure Celtic race. They are not Saxons, nor ever were. The ethnological inquiries I am now engaged in will, I trust, elucidate these and other matters which, no doubt, have their importance in the compiling the Natural History of the great Human Family. He asserts that the unmixed carnivorous Anglo-Saxon have crania like the red savages of America—broad, short, and distorted. Such assertions are not, I think, supported by an appeal to facts. Nevertheless, they glance at a particular section of the English and Flemish nationalities whose natural history has not yet been fully made out: the Dorsetshire labourer, the "navvie," the know-nothings of the south of England, and the boors of Teniers, of whom many may still be found in Flanders. I trust some day to be able to throw some light on these primitive races.

DR. MARSHALL HALL:

THE HISTORY OF HIS CASE, AND THE POST-MORTEM APPEARANCES.

If the pages devoted to the science of Medicine in this country may with advantage be illustrated with interesting and important cases, on no occasion can a space be more usefully or more gracefully afforded than in the present instance. We have to record the particulars of the case of one of the most distinguished, most talented, and most industrious of her professors; for such a man in every sense, was the late Dr. Marshall Hall. To render the story of his case complete, it is necessary to go back some years previous to the appearance of the last severe and fatal symptoms; for some peculiar features connected with the earlier symptoms rendered the case somewhat different to those generally met with in practice, and made the sufferer himself, always patient, thoughtful, and suggestive, consider that it presented features worthy of notice; and also made him anxious that its investigation should be completed by a post-mortem examination.

His own account of an early inconvenience or difficulty in swallowing, best explains the symptoms as they occurred:—"Some fifteen years ago," he wrote to a friend, "I undertook to deliver two long and distinct courses of Lectures on the Practice of Physic, during the same winter." His custom was to lecture from six to seven, and then from eight to nine, in the same evening. He felt inconvenience during this winter from hoarseness and cough for the first time, and began to perceive that minute portions of food were apt to remain in his pharynx, and that after meals he occasionally raised some small portions. This diffi-

* Macaulay.

† *Races of Man*, p. 334. Renshaw.

culty of swallowing very gradually appears to have increased; and he was induced, some years ago, to consult Sir Benjamin Brodie and Dr. Chambers on account of the increasing symptoms of obstruction; but on Sir Benjamin passing a bougie, no evidence of obstruction by contraction of the œsophageal tube could be detected. Mr. Guthrie, whom Dr. Marshall Hall also consulted, told him that he was only suffering from what was called "clergyman's throat." But the dysphagia continued, and during deglutition much care was requisite in the act of swallowing, and food could not be hastily taken, and while in the act of swallowing much regurgitation could be heard by those sitting near him.

He considered this condition to be due to a defective reflex action which prevented the muscles of the pharynx from acting with sufficient power to propel all the food lodged in it; but the probability is, that there was some such dilatation of the pharynx at this early period as is sometimes met with, and which in a measure acts upon the aperture of the œsophagus mechanically, and thus interferes with the ready passage of food. Such were the symptoms which continued slowly increasing, but which never prevented a sufficient amount of food to be taken, both solid and fluid, to keep up a proper nutrition, until about the end of 1855, when Dr. Marshall Hall first perceived that in the expectoration which he usually had in the morning there was occasionally a slight tinge of blood, and this especially after much speaking or exercise. The dysphagia also commenced from this time to be troublesome and serious.

Previous to this date, Dr. Marshall Hall had retired from active practice in London, as he found his health was failing to a certain extent, and some spots of purpura appearing on his legs. He wisely determined at once to give up the anxieties of professional occupation, though it entailed the sacrifice of a large professional income. He made a tour of the United States in 1854-55, and spent the following winter and spring in Italy. He returned to England much better in health, but not improved so far as the throat affection was concerned. After a short stay in town, he went to Hastings, and came to town again in October following. It was now that the symptoms of permanent stricture of the œsophagus were fully established. He had some time ceased to partake of solid food; milk, cream, and coffee, were the fluids he chiefly preferred. With the evident obstruction there was constant copious expectoration of purulent mucus, somewhat offensive in character, and occasionally during each day tinged with blood. He was seen in consultation by Dr. Williams, Mr. Caesar Hawkins, Mr. J. R. Martin, and Mr. Pollock, all of whom were agreed as to the serious nature of the complaint. He was quite prepared for the expression of their most unfavourable opinion, and was even cheerful whilst under examination. In speaking to one of his medical friends, who was constantly with him whilst in town, he said, "I don't ask you what your positive

opinion is as to my prospect of life, for no one can be certain of the result of a hidden malady; but I look upon my disease as a fatal one, and have long done so. I have no hope of recovery. I don't wish you to mention this to Mrs. Hall. I have no fear of death, and cannot be alarmed by the truth. My only wish to live is for the sake of others; but I am resigned to the alternative, if it be ordered that I should not live much longer." The calm, resigned, and almost cheerful manner in which he spoke, at once showed the preparation and the courage of a man who knew his end was not far distant, though still, as ever, unselfish, considerate, and affectionate, for those dear and near to him.

Whilst in London he had a wish to have the nitrate of silver applied in solution to the supposed ulcerated part of the pharynx; but when advised not to employ it, he readily acquiesced in the opinion of those he had consulted. He had applied the solution to the throat when in the country, but had been apparently much distressed by it; and though he had expressed a wish for its application a second time, he evidently had no great desire to persist in its use, from the distress it had occasioned.

After a short stay in London he removed to Brighton. He now placed himself under the care of Mr. Wildbore, whose constant care and attention to him he always spoke of with much gratitude, and to whose note-book we are indebted for the remaining particulars of his case.

After being settled in Brighton, he complained of, and suffered much from cold. It always distressed his throat, and rendered more difficult the efforts of swallowing. His room was obliged to be kept at a temperature of from 70° to 75°; his diet was entirely milk, cream, and coffee. In January of this year he wrote to Mr. Pollock:—"I have been for two months at Brighton, and the complaint has made no progress, but in cold, foggy weather my dysphagia is always worse. I am intensely susceptible to cold. I have been many days lately without blood in the expectoration; but last night it came on, after going to bed, without any assignable cause. Everything I take is apt to leave particles in my pharynx, even a light-boiled egg. Hence the cause of the irritation and consequent ulceration there. If so slight a thing will irritate and produce exudation of blood, there is surely ulceration there, and this, in fact, has all along been my opinion." We shall hereafter see how true was the opinion he had formed of his own case.

There was at all times, to a greater or less degree, "a stinging, burning pain" behind the larynx; sometimes for a day or two it was absent. During February the symptoms were variable, the dysphagia increasing as the temperature became colder. Once or twice there was slight regurgitation of fluid by the nose and mouth. Some considerable benefit was derived from sipping a solution of chlorate of potash in water several times a day, with marked temporary benefit to the swallowing, but the effect was not permanent.

In March he had a severe attack of gout, when much uric acid passed in the urine. This was relieved by small doses of potash sipped in water, and also used in an enema. The dysphagia slowly but gradually increasing, four pints of milk were now only taken in the course of the day, and it occupied nearly half an hour to get down half a pint.

On the 10th of March he walked out, after four months' confinement to the house. The sun was hot, but the wind very cold, and the following day he was confined to bed, suffering from bronchitis, and all his ordinary symptoms aggravated. During several hours no fluid could be swallowed, and on attempting to pass a tube for himself, an obstruction was met with opposite, as he said, the first or second portion of the sternum. This attack left him very weak. He complained much of thirst, and said his feelings of hunger were dreadful. Still he was most patient, and even cheerful in conversation, under all his sufferings.

In a few days the attack of bronchitis passed off, and he now derived much comfort from supping iced milk and sucking small pieces of ice; but the exhaustion and emaciation were becoming considerable, and the quantity of fluid taken by the mouth was reduced to about two pints in the twenty-four hours. Mr. Wildbore therefore recommended him to allow the administration of nutritious enemata, of which the following was the mixture; five ounces of strong beef-tea, one ounce of port wine, and three grains of quinine. This was given three times daily, and the whole quantity always retained. The quinine was added on account of his suffering from intermittent fever, which came on every night. The enemata were evidently absorbed, for the bowels only acted once in three or four days under the influence of a warm water enema, with some salt dissolved in it, and this would be followed by a healthy motion.

On the 10th of April, for twenty-four hours, there was complete interruption to the passage of fluid through the throat; but on the following day he was again able to swallow milk and some wine-and-water. Towards the end of the month the difficulty of swallowing was so great, that if more than three teaspoonfuls were taken directly one after the other, the fourth would bring on cough, and the greater portion would be returned by nose and mouth, mixed with mucus, as if the fourth spoonful filled up the tube to the aperture of the glottis, and thus excited cough.

During the month of May he suffered much from hunger; but taking the enemata four and five times a day appeared to nourish him to the extent that he was able to bear the erect posture, which he could not a fortnight previously owing to vertigo. The aguish attacks were also severe, and he took constantly about twenty grains of quinine in the enemata, which had the effect of relieving him, but produced deafness and singing in the ears.

In June the voice began to be affected; the expectoration, which had become white and frothy, was again purulent and offensive. The efforts to

swallow were attended with much exhaustion, and the struggles to get fluid down were very great. The loss of voice at the end of June was unchanged; the "stinging, burning pain" greater, and debility increasing; the expectoration very copious. Notwithstanding his condition, about the middle of the month he ate a fair dinner of lamb and asparagus for three or four days consecutively, swallowing it all. Then came a cold wind and increased dysphagia.

In July, early in the month, he applied himself a four-grain solution of nitrate of silver to the pharynx five times. This increased the "stinging, burning pain" greatly for two hours after each application, but no beneficial result of any kind was obtained. Chills and profuse sweats attacked him every evening, and the aphonia continued. During July he gradually became weaker, and the quantity of fluid taken by the mouth was about a pint to a pint and a half of milk daily. It may be mentioned that nearly all the time he was at Brighton, up to the last few days of his life, he looked fresh and healthy—a circumstance somewhat remarkable.

By his own desire, he went out in the early part of August in an open carriage, but all his symptoms were becoming worse; the breathing short and asthmatic, and the air-passages clogged with mucus. The rectum also became uncertain in its power of retention, and the enemata were sometimes returned. On August 11th, at twenty minutes past eight, he died, maintaining his consciousness to within a few minutes of his death.

His friend Mr. Wildbore wrote of him, but a few days before his death, "It is wonderful to me how he bears up against his disease. He is ever thoughtful of and kind and considerate to all around him, and most grateful for the least kindness or attention shown him; always interested in professional questions, and ever active in mind upon those subjects which have chiefly occupied his attention. He is most patient, and perfectly resigned." All who knew and watched him during the progress of his disease, and witnessed the high courage and true resignation with which he submitted to his sufferings and to the prospect of death, will feel that Mr. Wildbore's estimation and record of him was only what was just to the character of the greatest of English physiologists.

The post-mortem examination of the body was made by Dr. Ransom, of Nottingham, thirty-eight hours after death, in the presence of Dr. Hutchinson, Dr. Robertson, Dr. T. Wright, Mr. Higginbottom; Mr. Eddison, Mr. Wildbore, and Mr. M. H. Higginbottom, and for the record of which we are indebted to Mr. Ransom.

The body was emaciated. No external marks of decomposition.

Thorax.—The lungs did not collapse on the cavities being opened. The right one was universally adherent by old adhesions; the substance of the lungs healthy; no pleuritic effusion.

The pericardium contained nearly two ounces

of dirty red fluid. The heart was flabby (perhaps from cadaveric changes); it contained frothy blood in the right ventricle and auricle. The valves were competent. There were some slight atheromatous deposits on the inner surface of the aorta, which was stained a deep red.

The bronchial glands were larger than usual, soft and black.

On making examination of the parts higher up in the throat, it became evident that some undue thickening and adhesions existed behind the larynx. The latter was therefore removed, with the pharynx, œsophagus, and trachea. In doing this, the intimacy of the adhesions necessitated that the knife should be carried close to the bodies of the corresponding vertebræ; with every care, however, button-holes were made in two or three places. On removal, it was seen that the walls of the pharynx were extremely thin, and that its cavity was dilated. Through the openings made by the knife there escaped a dirty-brown flaky fluid, of a creamy consistence. The adhesions were to the bodies of the sixth and seventh cervical and first and second dorsal vertebræ.

The parts removed, when examined, showed a stricture of the œsophagus, about the level of the eighth ring of the trachea, and a dilatation, with ulceration and vasculature of the œsophagus and pharynx above the stricture, to the extent of nearly three inches. The stricture was attended with but moderate thickening of the tube, and the aperture was not very small, but the membrane was folded in, so as to present a conical eminence upwards, the apex of which was opposite the narrowest part of the stricture, which here was rather larger than a goose-quill. In this way the passage was almost valved, and food would have had the tendency to pass down by the sides of the eminence into the pouches and sacculi of the ulcerated portion. Indeed, the finger passed down from above, previous to opening the œsophagus, could not enter the passage, though a similar difficulty did not exist if the finger was passed from below the stricture. The upper border of the ulceration was on each side about level with the bases of the arytenoid cartilages, but did not extend so high in the middle. The dilatation was throughout irregularly ulcerated, soft, pulpy, ragged, of a dirty-grey or slate colour, and with a few loosely-adhering flakes on its surface. Its base was not much thickened, though here and there it was somewhat so, and felt firmer in such parts. The walls of the pharynx and œsophagus were perforated in several places, leading to pouches or sinuses amongst the muscles of the neck, having very thin delicate walls of false membrane. Two of these pouches were very large, and ran upwards on the outer surface of the thyroid cartilage, one on each side as high as its upper border, the right pouch being the largest. A narrow slip of mucous membrane remained at the back of the trachea, but this at the lower extremity was quite undermined.

At the lower part of the dilatation the ulcera-

tion had nearly perforated the trachea through the posterior membranous wall, and had set free the right extremities of the fourth, fifth, and sixth cartilages. The pharyngeal mucous membrane above the ulceration appeared nearly natural except for two or three little rounded elevations, as if there was a deposit in the mucous membrane, each less than half a pea in size. There was a small pendulous polypus attached to the thyro-epiglottidean fold. The œsophagus below the stricture was healthy.

In the mucous membrane of the trachea directly corresponding to the deep ulceration which threatened to perforate it, was a small deposit or growth—semi-transparent, solid, and slightly elevated. There was a similar one higher up, inside the cricoid cartilage, but it was more opaque and white.

The patch on the tracheal mucous membrane was cut across, and from a section of it were obtained cells which possessed all the characters of cancer-cells. They were delicate, large, irregularly angular, with elongated processes; some were, however, rounded, had peculiar large nuclei and nucleoli; often several of these in one cell, and sometimes a cell-wall around one or more of the contained nuclei. Some few of the nuclei presented a delicate, regular radial striation, which Dr. Ransom observes he had not before seen. These cells were contained amongst the meshes of the elastic tissue. From the whiter patch on the inside of the cricoid cartilage, similar cells were obtained, but they were fattily degenerated, and therefore were less characteristic. From the base of the ulcerated surface Dr. Ransom found in parts examined no satisfactory evidence of the nature of the pathological process which had preceded; but amongst a mass of granular and fattily degenerated elements, several bodies were always seen resembling retrograde cancer-cells.

The fluids from the surface of the ulcer consisted mainly of molecular detritus and fat, in drops and granules, with a great number of epithelium scales, mostly of the scaly variety; but a few were cylindrical and ciliated, probably separated from the upper parts of the pharynx. In the little elevations on the mucous membrane of the pharynx, nothing was found but globular corpuscles and cells filled with fat granules, of various sizes, and one beautiful hexagonal crystal-like cystin was observed.

A portion of the pharynx and œsophagus, examined by Mr. Caesar Hawkins, Mr. Pollock, and Mr. Holmes, curator of St. George's Hospital museum, gave the following results:—

1. A portion of the disease was surrounding the great vessels in the neck, and apparently making pressure on the upper part of the pharynx. The interior appeared of a cellular character. Sections showed fibrous tissue, with numerous nuclear bodies, and much fat.

2. A small tubercle, beneath one of the rings of the trachea, contained an immense number of nucleated cells, resembling those of healthy epithe-

lium, but of more curious form and size, also a good deal of fat.

3. A mass containing dark masses (of black pigment), otherwise exactly resembling the portion first mentioned.

Foreign Department.

On the Portion of the Urethra most frequently affected with Stricture.

WE alluded some time since to some statistics touching stricture of the urethra, published by M. Sée in the *Gazette Hebdomadaire*, of Paris, of the 9th of January, 1857. In this latter Journal (of the 24th of July, 1857), we find a letter addressed to the Editor by Mr. Henry Thompson, from which it appears that his investigations, mentioned in his Jacksonian Prize Essay, and which refer to no less than 270 preparations, have given him results differing from those mentioned by M. Sée. Mr. Thompson's figures are as follows:—In the first portion of the urethra (the junction of the spongy with the membranous portion), 67 per cent.; in the second (the middle spongy portion, viz., from the anterior extremity of the membranous portion to within two inches and a half from the meatus), 16 per cent.; in the third (the last two inches and a half of the canal, terminating at the meatus), 17 per cent. Mr. Thompson insists upon the fact that no example of stricture of the prostatic portion of the urethra exists in the museums of London, Edinburgh, or Paris, and that the data upon which his researches rest are far more numerous than those on which the labours of the French surgeons are founded.

Bronzed Skin.

THE affection of the supra-renal capsules, connected with this peculiar colour of the skin, is now called in France Addison's disease; and numerous articles and cases have been published on the subject in the French Medical Journals. Nor has the complaint remained unnoticed by the Academy of Medicine, where M. Trousseau, the eminent physician of the Hôtel Dieu, was Dr. Addison's warmest advocate. The Germans have yet been less active, and we would just call attention to a case observed in Germany by M. Mettenheimer before the publication of Dr. Addison's book, which offers a good illustration of bronzed skin.

The patient, aged forty-seven, had for several years suffered from debility, anorexia, and constipation; the skin was greyish brown, and he had such constant pain in the lumbar region that walking was impossible. He died comatose, and his skin looked as if he had long been taking nitrate of silver.

Autopsy.—Pleural adhesions, pulmonary indurations (tubercular, cancerous?) Heart small, ossified coronary artery, terminal branches obliterated, incipient fatty degeneration, auricles traversed with

fibrinous bands, atheromatous deposits on the aortic valves. Nutmeg liver, a few biliary calculi, spleen enlarged and of pulpy consistence. Both kidneys hypertrophied, and in the first stage of granular degeneration; between the apex of the right kidney and the liver lies a cancerous tumour of the size of a child's fist; a similar tumour in the same region on the left side. No trace of supra-renal capsules. Nothing abnormal in the intestinal canal.

Doubts respecting the Functions of the Pancreas.

PROFESSOR CLAUDE BERNARD, the successor of Magendie at the College of France, holds that the pancreatic secretion assists nutrition in facilitating the absorption of fatty matter by the lacteals. This view, supported by the actual experiments of such an eminent physiologist, had been generally accepted, and formed a portion of the supposed well-ascertained physiological facts of the day. But it would appear that Professor Bernard's views are doomed to be by turns vigorously assailed. A short time ago, the secretion of sugar by the liver was very skilfully put in question by several investigators; and now we find that M. Colin, professor of practical anatomy at the Veterinary School at Alfort, near Paris, has experimentally proved that animals whose pancreatic fluid is diverted by ligature and tube, and allowed to run to waste, absorb fatty matters into the chyle, which former can be proved to be present by the action of ether. The experiments have been repeated under the eye of M. Bérard, member of the Academy of Medicine, and pronounced conclusive. In these experiments no less than thirty-six dogs, three horses, five bulls, and four cows were sacrificed. The pancreatic fluid being made to run to waste by means of a glass tube communicating with an elastic one hanging out of the abdomen. The thoracic duct was opened at the lower part of the neck, and the chyle thus collected. The latter was found to be composed of a fatty emulsion, the adipose substance being readily separable by means of ether. It will hardly be credited that an ox yielded no less than *fifty quarts* of chyle in *twelve hours*.

Dr. Churchill's Treatment of Phthisis, before the Academy of Medicine of Paris.

DR. CHURCHILL (who lately endeavoured to institute experiments at the Consumption Hospital, Brompton) read before the Academy of Medicine of Paris, on July 21st, 1857, a paper on the Immediate Cause of, and on a Specific Remedy for Pulmonary Consumption. The summing up runs as follows:—

"In June, 1856, the Academy did me the honour of accepting sealed papers, in which were contained my first ideas respecting the specific treatment of the tubercular diathesis. I was at that period anxious to collect a greater number of facts illustrating my discovery; but ill health obliged me to suspend my labours, and the results which I now bring forward are much less numerous than

I could have wished. I have treated in all 35 cases of phthisis, both in the second and third stage—viz. with softening tubercles, or with vomicae. Out of that number, 9 recovered; with 8, the physical signs disappeared; 11 were much improved; 14 died; and 1 is now under treatment.

"From these facts, and the views contained in my paper, I may frame the following statements:—

"The immediate cause of tuberculosis, or at least an essential adjunct of it, is the decrease in the organism of the phosphorus which therein exists in a state capable of oxydation.

"The specific remedy of this complaint consists in the employment of a preparation of phosphorus which presents two characters—the first, of being fit for immediate assimilation; and the second, to be at the same time in the lowest possible state of oxydation. The hypophosphites of soda and lime are the salts which have hitherto presented these two characters in the most complete manner. Either of these salts, administered in doses varying from ten to forty-five grains per diem, may be used in the treatment of phthisis. The highest dose which I have given to adults has been fifteen grains a day.

"These preparations have a direct action on the tubercular diathesis, and diapel with a really wonderful rapidity all the symptoms which characterize the disease. When the morbid deposit which is the special result of the dyscrasia is recent, when the softening is only incipient, and does not take place too rapidly, the tubercles are removed by absorption, and disappear without leaving any trace. When the deposit is of older date, and the softening has reached a somewhat high degree, the breaking-down process may continue in spite of the treatment, and the issue of the case will depend on the pathological peculiarities of the lesion, on its extent, and especially on the presence or absence of complications. I have made numerous attempts to modify the local mischief by means of inhalations of several substances, but I have obtained no favourable results, except such as were owing to the general treatment.

"The physiological effects which I have observed during the administration of the phosphites of soda, lime, potash, and ammonia, prove that these salts have a double action. On the one hand, they immediately increase the principle (whichever it may be) which constitutes nervous power; and they present us, on the other hand, very efficient blood-generating agents, far superior to any hitherto known. These preparations possess in the highest degree all the therapeutical properties attributed by former observers to phosphorus, and are devoid of the dangers which have almost consigned this substance to oblivion. It cannot be doubted but that hypophosphorous preparations will henceforth rank foremost in therapeutics."

Ether versus Chloroform.

PROFESSOR BARRIER, of Lyons, has published in the *Gazette Médicale de Lyon*, August 15th, 1857, an able article, wherein he contends that ether should be used in preference to chloroform as an anæsthetic. He concludes by propounding the following opinions:—

"1. When death is instantaneous, it must be the result of an idiosyncrasy which contributes in rendering the prostration of the nervous system more rapid and complete; hence fatal syncope.

"2. As ether acts less powerfully and quickly than chloroform, it exposes patients less frequently to that instantaneous prostration.

"3. If asphyxia can be looked upon as one of the causes of death under anæsthetics, it may be easily prevented, when it arises from an imperfect mode of inhalation, which does not allow a sufficient amount of air to enter the chest.

"4. If death, on the other hand, is the consequence of protracted anæsthesia, the latter is of course the more dangerous in proportion to the rapidity of action of the anæsthetic agent.

"5. Ether is to be preferred to chloroform, because it is less dangerous, and that the few disadvantages attributed to that agent are of too secondary a character to cause its use to be given up in operative surgery."

That the data as to the number of deaths by chloroform must be very incomplete, is proved by a fact stated in the above-mentioned article. M. Barrier states that five deaths from inhalations of chloroform have, to his knowledge, taken place at Lyons, and that *one* only has been published.

Results of the Operations of Tracheotomy Performed for Croup at the Children's Hospital, Paris, during the year 1856.

We find in the *Bulletin de Thérapeutique* (May 30th, 1857) an extremely instructive table respecting tracheotomy in croup, taken from the thesis of M. André, late house-physician (interne) of the Children's Hospital:—

AGE.	NO. OF PATIENTS.	DEATHS.		RECOVERED.	
		Boys.	Girls.	Boys.	Girls.
From 15 months to 2 years	6	2	4	0	0
" 2 years to 3 yrs.	9	4	5	2	0
" 3 " 4 "	13	5	8	4	0
" 4 " 5 "	11	6	5	1	1
" 5 " 6 "	6	3	3	1	1
" 6 " 6½ "	3	1	2	0	1
" 7 years . . .	2	0	2	0	1
" 8 " . . .	2	0	1	1	0
" 9 " . . .	1	0	0	1	0
" 9½ " . . .	1	0	0	0	1

From this table it appears that many successful cases of tracheotomy have been observed, as nearly one-third of the patients recovered. The most notable success has been obtained with children from nine to nine years and a half old.

and then with those children who were from five to six years old. The least satisfactory results were observed from fifteen months to two years, for here we have six operations and six deaths. All the children under two years are to be found in the column of deaths; and all those who died, except two, were just a little more than two years old. M. André thinks that these facts may be explained by the greater amount of resistance with the older children, both as regards the disease and the operation. He also conceives that debilitating means, as leeches, blisters, &c., should be sparingly used so as to husband the strength for tracheotomy.

Mr. Bourjeaud's Abdominal Belt in Paracentesis Abdominis.

MR. BOURJEAUD, whose elastic apparatuses are well known in this country, has read a paper before the Academy of Medicine of Paris, wherein he shows the advantages of using his abdominal belt in preference to the flannel roller in paracentesis abdominis, especially when the operation is undertaken in ovarian dropsy.

The author insists upon the fact, that the gently compressing power of the belt assists in the evacuation of the fluids through the canula; that this compressing force is more gradually and methodically exerted by the bandage than the roller; that the viscera, accustomed to the pressure of the fluid, are not, after the tapping, supported by an unequal pressure, as must happen with the roller; and that the results of the operation are, therefore, more likely, *ceteris paribus*, to be favourable when the belt is used in preference to any other contrivance. The belt is, in fact, the author states, a valuable auxiliary in the operation alluded to; and supposing the circumference of the abdomen at the time the paracentesis is being performed to be forty inches, the belt should be about thirty. The apparatus must be deep enough to reach from the ensiform cartilage to the pubes, and be slipped on from the feet. The abdomen and the ovarian tumour are thus subjected to an equable, powerful, and constant pressure. The surgeon then thrusts his trocar and canula into the abdomen, through a little aperture made in the belt; and the fluid escapes by the canula as soon as the trocar is withdrawn. The serum leaves the cyst in a full, uninterrupted stream, evidently owing to the constant pressure of the belt, which, by its elasticity, follows the falling in of the cyst as its contents are escaping. In this manner is superseded the necessity of kneading the abdomen, or squeezing it by the formidable-looking flannel roller pulled more or less roughly by two assistants.

Mr. Bourjeaud quotes a recent case of ovarian dropsy, operated upon in Paris by Messrs. Piogey and Morpain, where two cysts were separately punctured. The belt answered remarkably well. Another case is also mentioned, in which the operator was the late Mr. Bransby Cooper; the belt

was here also eminently successful. The advantages of this simple apparatus in paracentesis abdominis are so self-evident, that the use of it will probably ere long, be generally diffused in this country.

Twelvemonth's Incubation of a Vaccine Pustule.

M. BLACHE mentioned at a late meeting of the Medical Society of the Hospitals of Paris, that M. Despaux Ader vaccinated in October, 1855, a young lady who was leaving for England. No result was obtained, and he had a letter from his patient more than a twelvemonth afterwards, saying that vaccine pustules had just appeared on the spot where the punctures had been made. The pustules went through their usual stages, and their nature was verified by an eminent English physician.

News Items, Medical Facts, &c.

ESSEX LUNATIC ASYLUM.—On Thursday, the 13th inst., an interesting match was played by the officers and inmates, between two elevens selected by the medical assistant and steward, when, after a well-contested game, and some play which would have done credit to the "All England," the "steward's eleven" were declared victors, with seven wickets to go down. The "ladies" of the establishment were on the ground, and took a lively interest in the game, if we may judge by the merry peals of laughter which greeted any unfortunate player who happened to make a false step. After the match, about sixty of the working men sat down to their "harvest supper," which having been freely discussed, they next turned their attention to the "delicious weed," and this received its due share of attention. At the conclusion, the National Anthem was sung, and hearty cheers were given for the visiting committee and superintendent.

THE POISONING AT HONG-KONG.—Mr. Tarant, of Hong-Kong, has revived the subject of the poisonings by bringing an action against Alum for selling unwholesome bread. The Attorney-General, abandoning all suggestion of guilty knowledge in the defendant, rested his case upon the common-law obligation cast upon a baker to sell only bread fit for the food of man. The presence of arsenic was fully proved, and the jury returned a verdict for 1010 dollars. The point of law is of course reserved.

CHARITABLE PURPOSES ESTIMATES.—The following sums have been voted for the current year:—£2000 for the vaccine establishment; £2895 for infirmaries in Ireland; £3985 for the Westmoreland Lock Hospital in Dublin; £900 for the Rotunda Lying-in Hospital in Dublin; £400 for the Coombe Lying-in Hospital in Dublin;

£7600 for the House of Industry Hospital in Dublin; £3100 for the Cork-street Fever Hospital in Dublin; £600 for the Dublin Meath Hospital; £200 for the St. Mark's Ophthalmic Hospital in Dublin; £1085 for Dr. Steeven's Hospital in Dublin.

STATUE TO A FRENCH NATURALIST.—The statue of Etienne Geoffroy St. Hilaire, the great naturalist, is to be erected in Etampes, his native place. The expenses are to be defrayed by the city of Etampes and a general subscription.

THE STATUE OF BICHAT.—A statue in cast metal, by the late David (d'Angers), has just been completed, and will be placed in the courtyard of the School of Medicine of Paris. This beautiful work of art had been ordered by the committee appointed in 1845 by the Great Medical Congress, and has been presented to the faculty by the committee.

DEATH FROM A DISSECTING WOUND.—A very highly-esteemed interne (house-physician) of the hospitals of Paris, M. Saint Germain, has just died in consequence of a dissecting wound.

DEATH OF A SURGEON BY POISON.—An inquest was held on the body of Mr. Thomas Storm Robertson, aged forty-eight years, surgeon, of Assembly-row, Mile-end. The deceased had latterly complained of severe pains in the head, and inability to sleep. He had been much excited and harassed in attending a medical friend. On the night of August 5th, he went to bed as usual, and on the next morning he was found dead in bed. A bottle containing hydrocyanic acid was found on his dressing table. Mr. Wella, surgeon, stated the result of a post-mortem examination he had made. The jury returned the subjoined verdict:—"That Thomas Storm Robertson was found dead in bed, and on a post-mortem examination of his body, his death appeared to have occurred from a congestion of the vessels of his body, caused by an over-dose of hydrocyanic acid taken as a sedative to procure relief from violent headache and sickness, and not with any intention to destroy life." The deceased was highly respected in the profession, and was a clever anatomist.

A SCHOOL OF MEDICINE AT ALGIERS.—By a decree, dated August 4th of this year, a preparatory school of medicine and pharmacy is to be instituted in Algiers. There will be the usual number of Chairs (eight), and both the civil and military hospitals are to be opened to the pupils for clinical instruction. The school will, as far as examinations are concerned, be in connexion with the Faculty of Montpellier; but the diplomas granted in Africa will entitle to practise in the French possessions of that part of the world. To

commence medical studies, the young men, be they either Arab or other Mussulmans, must produce a certificate from the director of the Franco-Arabian College as to literary acquirements; the French, from the rector of the Academy of Algiers. There will be no religious restrictions.

DEVELOPMENT OF THE FRONTAL SINUSES.—We have been shown very beautiful photographs of sections of the frontal bone, illustrating the development and the varying capacity of the sinuses. These illustrations are extremely interesting, as they afford actual, very carefully-collected data respecting the development and capacity of the sinuses, on which our knowledge was hitherto imperfect. Mr. Willmott, anatomical modeller to St. Mary's Hospital, to whose patient investigation and zeal we owe the sections and photographs, states that "in some young male and female adults the sinuses are very largely formed, and appear to have been developed somewhat in proportion to the growth of the bones of the head; whereas with some at the same age it is very small and irregular, and in a few no sinuses at all exist above the supra-orbital processes." Hence it appears that great irregularity prevails in this respect, the proportion being one frontal bone without sinuses to six or eight presenting such cavities, in all the skulls of which Mr. Willmott has made sections. The photographed diagram also shows that the capacity of sinuses differs considerably, some being sufficiently large to hold one ounce and a half of fluid, the others hardly admitted one drachm. The knowledge of these facts may certainly be of service to the surgeon in wounds about the forehead, whether gun-shot or others. Nor must it be overlooked, that no correct idea of the shape of the brain in this situation can be formed, considering the existence of such irregularities as regards the capacity of the sinuses. Mr. Willmott's sections and illustrations will be found of great service to all those interested in anatomical science.

A DOMESTIC DETONATOR.—The number of accidents occurring in Paris from the common employment of gazogenea, or machines charged with aerated waters, has been so great, as to attract the attention of the Society of Surgery. At a late meeting, upwards of twenty cases were recorded of explosion, with all the force of a gun, of these machines, the fragments causing in some cases very severe wounds. The employment of aerated waters is always grateful, and often very beneficial. They are gradually coming more generally into use in England, and would be still more commonly employed but for the exorbitant sums charged for the machines by London, compared to Paris, traders. We think it right to direct attention to the necessity of caution in using gazogenea, especially when they are just charged.

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" Tartrate of Potassium and Iron.....	"	130	2 grains.....
" Rhubarb and Magnesia.....	"	130	1 grain of each.....
" Sulphate of Quinine.....	in Bulk.....	"	1 grain.....
" Pills, Aloetic, U. S. P.....	"	"	2 grains.....
" " Aloes and Assafetida ".....	"	"	2 grains.....
" " Aloes and Myrrh, (Rufus' Pills,) U. S. P.....	"	"	2 grains.....
" " Assafetida, ".....	"	"	2 grains.....
" " Opium, ".....	"	"	1 grain.....
" " Compound Cathartic, ".....	"	"	1 1/2 grain.....
" " Compound Calomel, Plummer's Pills, ".....	"	"	1 1/2 grain.....
" " Calomel, U. S. P.....	"	"	2 grains.....
" " Dinner, (Lady Webster's).....	"	"	1 1/2 grain.....
Blue Pills.....	in Bulk.....	"	3 grains.....
Pills, Opium, et Acet. Plumb.....	"	"	Each 1 grain.....
" Extract of Ratanhy.....	"	"	Each 1 grain.....
" " Copaiba, pure solidified.....	Bottles.....	72	10 grains.....
" " Copaiba and Cubebs.....	"	72	10 grains.....
" " Copaiba, Cubebs and Citrate Iron.....	"	72	10 grains.....
" " Cubebs and Alum.....	"	72	10 grains.....
" " Cubebs, Ratanhy, and Iron.....	"	72	10 grains.....
" " Cubebs, pure.....	"	72	10 grains.....
Extract of Belladonna.....	Bottles.....	100	1-5 grain.....
" Hyoscinamus.....	"	100	1-5 grain.....
" Ipecac.....	"	100	1-5 grain.....
" Opium.....	"	100	1-5 grain.....
Digitaline.....	"	60	1-50 grain.....
Strychnine.....	"	100	1-50 grain.....
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IN TWO VOLUMES ANNUALLY.

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No. 5.

Lectisomian Lectures

ON

MIDWIFERY,

*Delivered before the Medical Society of London,
May, 1857.*

By ROBERT BARNES, M.D.

LECTURE II.

(Continued from October No., p. 200)

OUR next question,

WHAT IS THE SOURCE OF THE FLOODING?

has been to some extent anticipated by the preceding discussion of the mode of arrest. This question has, moreover, been of late years closely investigated. I shall pass it over as succinctly as its importance will permit.

It is, first of all, debated whether the bleeding proceed from the bared surface of the uterus, or from the exposed surface of the placenta, or from both. If we exclude one of these assumed sources, we of course approach a solution. I think we are unable to do this. The condition of the placenta found in these cases seems to present an effectual barrier against the profuse gushing flow of blood through its substance. The detached portion of placenta is soon choked up with coagulated blood. Dr. Chowne has further well shown that the structure of the placenta, even when not filled with coagula, is opposed to the rapid transit of blood. The Hunters long ago demonstrated the same thing. The cavernous structure of this organ can only permit a slow and *equable* movement. In addition to this inferential negative evidence, we have a large amount of direct positive evidence that flooding proceeds from the uterine surface. To say nothing of ordinary post-partum hæmorrhage, which is strictly identical in kind, Dr. Merriman relates a case of inversion, in which he *saw* the blood issuing from the uterine surface. Dr. Chowne had collected a mass of similar evidence. We may, then, conclude that the hæmorrhage is uterine. It remains

to decide whether it be venous or arterial. It has generally been assumed to be venous. The arterial source has recently been most ably and, I think, convincingly contended for by Dr. Mackenzie, who appeals to facts of three kinds.

1. Having opened the uterus of a pregnant bitch, and detached the placenta, he observed that the blood flowed freely from the uterus, and that it was *arterial*.

2. Having injected defibrinated blood into the hypogastric arteries of a woman, the placenta being previously partially detached, he again observed that the blood flowed exclusively from the uterus, and from the utero-placental *arteries*.

3. He adduces the recorded observations of many practitioners to show that, in women flooding from placenta prævia, the blood was arterial in colour.

This last evidence is necessary to complete Dr. Mackenzie's case, for the evidence drawn from his experiment on the dead woman is not enough to prove that venous blood may not regurgitate and escape from the uterine sinuses in the living woman. Dr. Chowne has shown how freely water will escape from these sinuses by injecting the vena cava backwards.

It is certain that in the majority of cases it has not been very carefully noted whether the blood issuing from the vagina was arterial or venous. But in some it is particularly specified. I am tempted to quote the following case, given by A. C. Baudelocque,* from Baudelocque the elder.

CASE 6.—“A woman, seven and a half months advanced in pregnancy, sat down upon the grass for a few moments to rest after a long walk. Soon after, she felt in the fundus of the womb and in the loins dull pains, which she attributed to fatigue. On the same evening, her abdomen appeared larger, and it increased so much during the night as to excite her surprise. Having but feeble pains, she got up, and took, as usual, a cup of milk coffee. Immediately after this breakfast,

* *Traité des Hémorrhages*, ed. 1851, p. 101.

she lost some water, tinged with blood, and experienced slight faintings, which obliged her to return to bed. When seen by Baudelocque, at half past twelve o'clock, she was pale and dying; her pulse could hardly be felt; she fainted every minute. I thought at first, he says, that she had lost torrents of blood, but no clots had passed, and the linen was hardly stained by a sanguineous serosity. The neck of the womb, situated deeply towards the sacrum, was fully developed, the orifice was opened to the size of a piece of twelve sous, and its edge was soft. Slight pains were felt from time to time, expelling every time a little *clear scarlet blood*, the escape of which was followed by fainting. I brought the orifice down to the middle of the pelvis, dilated it gradually, and in less than half an hour it exceeded the size of a large écu. During this time, a forceps was being sought for. As soon as it was brought, I opened the bag of membranes, and the head presenting, I seized it with the instrument, and extracted it. The child gave no sign of life. Before the rupture of the membranes, and when the mouth of the womb had opened to the size of an écu of six livres only, such a large quantity of *blackish clots* had come away, that I estimated it at more than would have filled a hat. Then there escaped a considerable quantity of *fluid scarlet blood*. The faintings became more marked and frequent. . . . The placenta presented itself spontaneously, and was extracted almost as soon as the child. Its external surface, a very small portion excepted, was covered with coagulated blood; it had occupied the fundus of the uterus. From this moment the woman lost but little blood. . . ."

I offer the following commentary upon this history with confidence. The hæmorrhage was due, as Baudelocque concludes, to detachment, probably almost complete, of the placenta. The placenta had not been adherent to the neck of the uterus. The symptoms indicate an internal hæmorrhage. The appearance of the placenta, when removed, and the history of the case, point to detachment of the placenta as the cause of the hæmorrhage. The source of the hæmorrhage was not the neck of the womb, for the symptoms of profuse internal hæmorrhage, and the escape of bright scarlet blood externally, were observed before any examination or any attempt to dilate the mouth of the womb which might be supposed to have caused laceration of its substance, had been made. The bright scarlet blood escaped on the occurrence of the pains, and each loss was followed by fainting. The large quantity of blackish clots that came away in a mass was that blood which had been first lost, which was the result of the internal hæmorrhage. This blood, from being retained in the womb, had had time to coagulate, and had been blackened by contact with liquor amnii. All the blood which was observed at the moment of escape was arterial in character; and this arterial blood could have no other source than the arteries of the uterus.

Drs. M'Clintock and Hardy, in their admirable work, p. 206, relate a case of hæmorrhage from

complete placental presentation, in which it is stated that "there came a sudden gush of about a *pint of florid blood*."

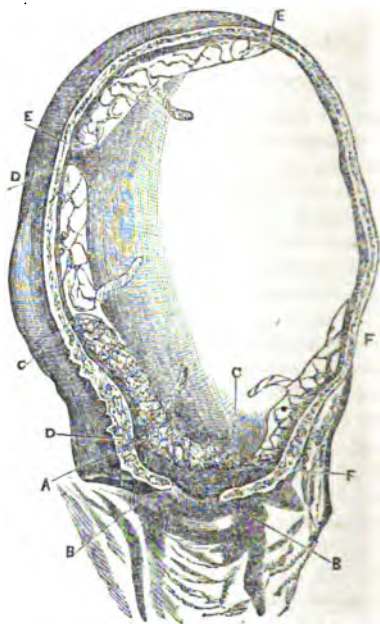
I have myself distinctly observed the arterial character of the blood escaping under similar circumstances. It is also to be borne in mind that the sudden intermitting gushing character of the discharge is more compatible with an arterial than with a venous source.

Believing, however, as I do that the weight of evidence turns in favour of the views of Dr. Mackenzie, I do not think that the venous origin of flooding can be altogether excluded. In a state of uterine muscular atony, such as often attends flooding from placenta prævia, the mouths of the uterine sinuses must remain patulous, and, unless obstructed by clots, may easily give passage to retrogressive blood. The cases of what Dr. Chowne has properly called "passive hæmorrhage" seem to establish this fact.

THE VARIETIES OF SEAT OF PLACENTAL ATTACHMENT.

At this point of our inquiry we may usefully enumerate the varieties of seat of placental attachment. To illustrate this point, I have constructed the following diagram. The placenta

FIG. 3.



- E. E. Fundal placenta.
- D. D. Lateral placenta.
- F. F. } Latero-cervical placenta.
- C. B. }
- A. B. }
- B. F. } Seat of cervico-oral or central placenta.
- A. } Line of boundary between normal and prævia
- F. } placental attachment, and consequently of
- spontaneous placental attachment during ex-
- panation of cervix.

may be attached to the fundus or upper zones of the uterus—*fundal* placenta; it may be seated on the middle zones—*lateral* placenta; it may en-

croach downwards upon the cervical zones—*late-ro-cervical* placenta; or it may grow entirely over the inferior pole, rising on all sides so as to occupy the cervical zones—the *cervico-oral* or *central* placenta.* The fundal and lateral placentas are not, unless under very exceptional circumstances, liable to detachment, or to lead to flooding, before the birth of the child. The latero-cervical and the central placentas are, however, so liable. The extent to which this liability goes is greatly affected by the extent to which the encroachment takes place within the cervical zones. In this case there may be little or no hæmorrhage; but should the encroachment proceed further down, the danger of hæmorrhage would much increase. There are cases of flooding before the birth of the child, in which no placenta can be felt, and which are yet strictly cases of placenta prævia. How, it may be asked, do we get evidence of this? Nothing is more simple.

The following case shows one kind of proof:—

CASE 7.—On the 13th of May, 1852, my assistance was required by one of the midwives of the Western General Dispensary. A poor woman, weakened by poverty and hard work, having had two children at full term and of full size, was in labour at nine A. M. For two days previously she had had hæmorrhage, which was still going on. The head was low in the pelvis and lying in the first position, and there appeared to be sufficient room; it had, according to the midwife, been in the same position for four hours without any advance. The pains had ceased altogether. Pulse feeble; face pale; great exhaustion, anxiety, and depression of mind. Fearing that further hæmorrhage might be fatal, I determined on delivering by forceps. Whilst waiting for the instrument, I directed the midwife to give an enema. I comforted the patient by assurance that she would do well. Almost immediately after, effective pains returned, and the head was expelled in an hour. No further hæmorrhage. Child still-born.

It appeared to me that the uterine contractions were arrested in the first instance under the influence of anxiety and terror. The midwife, before sending for me, had sent for Mr. Cholmeley and Dr. Babington (she was a patient of Queen Charlotte's Hospital), and more than two hours had been thus lost. My arrival and assurances restored her confidence; and under the beneficial influence of that feeling the uterine contractions returned. The decidua surface of the placenta presented numerous specks of osseous deposit; the margin of the placenta presented large fresh coagula of dark colour in the substance, and very large fresh coagula were attached to the very edge, and had evidently proceeded from a rupture of the circular venous channel which courses round the placenta.

It is this presence of coagula in the margin of the placenta which proves that it had been detached during labour, and that it had encroached

upon the cervical region of the womb. In cases of this kind it is often remarkably well seen how dependent the hæmorrhage is upon the inactivity of the womb, and how completely contraction checks it. Some most instructive cases of the class have been described by Dr. Tanner and by Dr. Stephen Monkton of Brenchley. They unfortunately neglect to record the state of the placenta after removal. But Dr. Monkton clearly adopts my view of the nature of these cases. He says, "They approximate to the unavoidable hæmorrhage of Rigby; the placenta being not prævious, but sufficiently near the os to come within the scope of that expansion which occurs about the cervix and the lower segment during the last months."

CASE 8.—On the 21st of June, 1849, a young woman at the full term of her first pregnancy died in convulsions, under suspicion of poison. I assisted at the post-mortem examination by order of the coroner. The placenta was attached to the whole anterior wall of the uterus from the fundus down to the cervix, but not quite reaching to the mouth. The position of the placenta was exactly that which is presumed to have led to the hæmorrhage in the cases just referred to.

Another proof is very interesting. I believe it was first explained by Levret:—

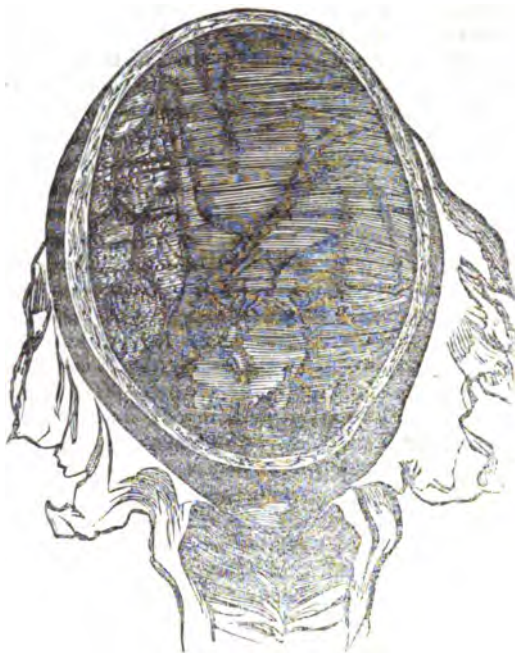
"Lorsque le placenta est attaché dans le fond de la matrice, centre sur centre, non seulement le cordon ombilical est au centre du placenta, mais même les membranes se déchirent dans leur milieu à une égale distance, pour ainsi dire, de tous ses bords; et lorsque le placenta se trouve dévié vers les parois de la matrice, outre que le cordon suit et marque le degré de cette déviation les membranes se déchirent en même raison—c'est-à-dire, d'autant plus près de l'un des bords du placenta que cette déviation est grande. Si donc le placenta est attaché assez bas dans un endroit des parois de la matrice pour que le cordon se trouve implanté sur le bord, ce sera sur ce même bord et dans ce même point que les membranes se déchireront."

I have made the following sketch to illustrate this position. Recently this subject has been experimentally examined by Dr. Von Ritgen.* He found that the bag of membranes burst at the edge of the placenta in 22 cases; it burst at one inch from the edge in 8 cases; between one and two inches in 12 cases; between two and three inches in 16 cases; three inches in 5 cases; between three and four inches in 4 cases; at four inches in 6 cases; between four and five inches in 8 cases; at five inches in 3 cases; at six inches in 6 cases; and at eight inches in 3 cases. It follows that since the distance of the edge of the placenta from the rent is absolutely decisive as to the distance of the edge of the placenta from the os uteri, that the edge of the placenta

* Monatschrift für Geburtskunde, October, 1855; and my Report on Midwifery, British and Foreign Medical-Chirurgical Review April, 1856. Dr. Von Ritgen has, in a subsequent paper, again referred to his researches on this point, as if they were based upon an original idea. It is right, therefore, to call to mind that he whole matter had been most lucidly described by Levret.

rested on the os uteri in 22 cases, and was within one inch in 32 cases, and so on. This proves that the placenta has commonly a much lower seat than has hitherto been believed.

FIG. 4.



Drawing showing how the seat of rent in the membranes indicates the seat of attachment of the placenta to the uterus.

This frequent latero-cervical attachment of the placenta has other important bearings in obstetric practice. I must beg permission to digress for a moment to refer to them. It was pointed out by Levret that it was a frequent cause of laborious labour and of post-partum hæmorrhage. The attachment of the placenta to the lower segment of the uterus so modifies its thickness, vascularity, and capacity for contracting equally with the other portions of the uterus situated in the same zone, that the labour is rendered painful and lingering; and, when the child is born, the faulty position of the uterus, added to previous exhaustion, disposes to a renewal of hæmorrhage.

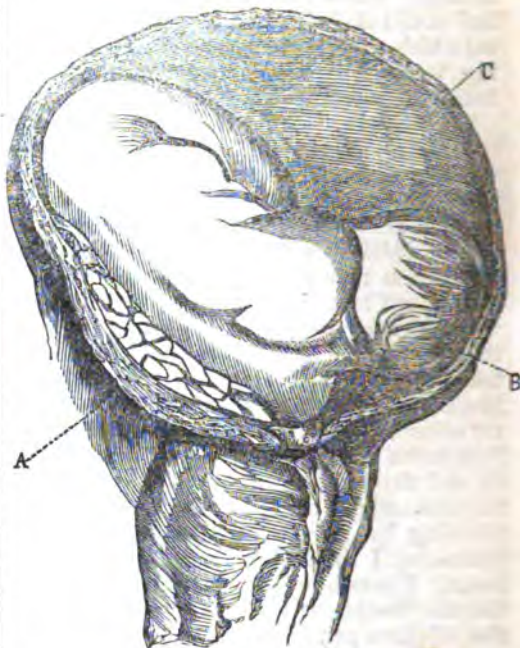
There is another fact of practical interest. The frequent complication of cross-presentation of the child with placenta prævia has often been observed. The explanation of Levret satisfactorily ranges the two facts in the relation of cause and effect.

In describing a case where the head was thrown on one side, which he delivered by the forceps, he says:—"Il n'est pas difficile de décider que le placenta s'étant fortuitement attaché du côté droit près de l'orifice; il a dû empêcher la matrice de se dilater suffisamment de ce côté, conséquemment il l'a obligé à prendre une figure oblique. Mais ce qui a totalement déterminé cette mauvaise situation a été l'inflexibilité de l'orifice de cet organe en cet endroit, lequel j'ai reconnu

dur et comme calleux, pendant que son côté opposé était totalement effacé. Il faillait donc, par ces raisons, que l'enfant, se présentant par la tête, elle s'engageât dans ce détroit suivant une ligne oblique à la rectitude du corps." And at page 125:—"La difficulté de l'enfantement ne vient pas seulement de l'obliquité de la matrice, mais encore de la difficulté que l'orifice a à se dilater dans le lieu prochain de l'attache du placenta, par la raison que la paroi de ce viscère est plus épaisse dans cet endroit."

The diagram (Fig. 5) I have constructed will serve to impress this fact.

FIG. 5.



A. The rigid inclined plane formed by the placenta, and hypertrophied placental seat of uterus, throwing fetal head over it.
B. The thin yielding portion of uterus.
C. Thin yielding portion of uterus distended by hydrostatic pressure.

I believe these considerations present a rational explanation of a multitude of cases of præ-partum hæmorrhage, lingering labour, cross-births, and post-partum hæmorrhage, the cause of which has been altogether overlooked.

Having considered the varieties of seat of the placenta, we are naturally led to examine the relation of the several parts of the muscular structure of the uterus to the placenta in its different positions. The general disposition of the muscular fibres of the uterus may be taken to be pretty accurately determined. There is a general accordance amongst anatomists concerning the leading points. The dissections of the Hunters confirmed, correcting somewhat, the description of Ruysch, and these in their turn have been confirmed by the dissections of Sir Charles Bell, Professor Owen, and others. Preparations may be seen in most museums which exhibit clearly

the disposition of the muscular fibres in the different regions. I must, however, recite to you the description of Sir Charles Bell, not only on account of its graphic beauty, but also because he has laid the anatomical foundation of those physiological views concerning præval placenta to which I was led by clinical observation.

"It has been proved by the sections of the uterus made in different states of its contraction, that the order of the muscular fibres is calculated so as to close the vessels; that where Nature has provided for the attachment of the placenta, there the broken vessels are guarded by the provision of the surrounding muscular texture; but we know also that during this contraction of the superior part of the womb, the lower part dilates and relaxes. Now if the contraction of the womb be essential to the safety of the mother, what will be the effect of the attachment of the placenta to a part of the womb which must relax during the labour! Everyone knows the peculiar danger of *placenta prævia*, that each labour-pain as it returns increases the violence of the flooding instead of checking it.

"I have been led to conclude that *the placenta cannot be partially separated if it be attached in a regular circle to the fundus of the uterus*: it cannot be partially separated, and cannot be separated bodily until the uterus is permitted to have a great degree of contraction by the delivery of the child; the circular muscles of the fundus being agents in a double capacity, that is, both in expelling the child, and in constringing the uterine vessels; by the time the child is expelled, the vessels of the fundus are greatly diminished in diameter. Further, the place and strength of the muscles being perfectly regular and uniform, their action must have the effect of equally drawing the surface of the uterus, which is in correspondence with the margin of the placenta; but no one part of it will be separated until the general restriction is nearly completed. This will not be the case when the margin of the placenta extends irregularly, or when the placenta is attached to the side of the uterus. After the delivery of the child in cases of flooding, it is not uncommon to find a portion of the placenta low down in the uterus, and separated, while the greater portion remains attached to the fundus. In examining the inner surface of the uterus by dissection, I have seen the part corresponding with the placenta irregular in its form, and extending towards the side and neck of the uterus. In such circumstances of the attachment of the placenta, the retraction on the lower part of the womb being to a greater extent than the fundus, will account for the too early separation of that margin of the placenta which stretches towards the orifice, and also for the hemorrhage which is a consequence of this partial separation, but in progress of the labour, and after the discharge of the waters, the more powerful efforts of the uterus draw the muscular fibres more closely around the blood-vessels, and then the flooding ceases."

I am then entitled to rest the anatomical

foundation of my views upon the authority of Sir Charles Bell.

LECTURE III.

SUMMARY OF THE PHYSIOLOGY OF PLACENTA PRÆVIA.

THE chief points in the physiology of placental attachment are expressed in the following diagram:—

FIG. 6.

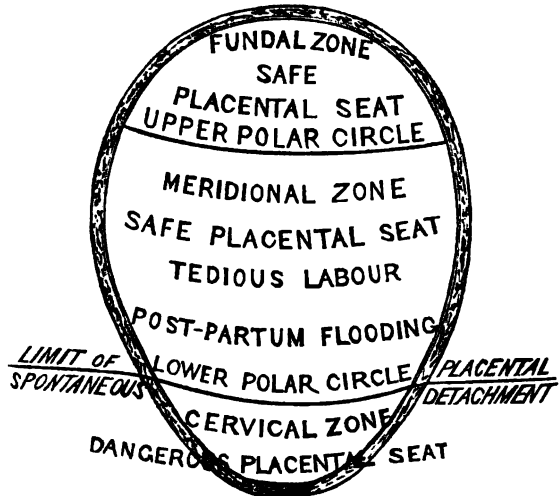


Diagram illustrating the various sites of the placenta, and the relation of these sites to hemorrhage.

The inner surface of the womb may be divided into three zones or regions by two latitudinal circles. The upper circle may be called the Upper Polar Circle. Above it is the fundus of the uterus. This is the seat of fundal placenta: the most natural position. It is the zone or region of Safe Attachment. The lower circle is the Lower Polar circle. It divides the cervical zone or region from the meridional zone. The space comprised between the two circles is the region of lateral placenta. When attached in this region, the placenta is not liable to previous detachment. It may, however, cause obliquity of the uterus, transverse position of the child, lingering labour, and dispose to retention of the placenta and post-partum hæmorrhage.

Below this circle is the cervical zone: the region of dangerous placental attachment. All placenta fixed here, whether it consist in a flap encroaching downwards from the meridional zone, or whether it be the entire placenta, is liable to previous detachment. The mouth of the womb *must* be pulled open to give passage to the head. This enormous contraction or retraction of the longitudinal cervical fibres is incompatible with the preservation of the adhesion of the placenta which is within its scope. In every other part of the womb, there is an easy relation between the contractile limits of the muscular structure and that of the cohering placenta. Within the cervical region this relation is lost. The contraction of the uterine tissue is in excess.

The lower Polar Circle is, then, the physiological line of demarcation between prævial and lateral placenta: it is the boundary-line *below* which you have spontaneous placental detachment and hæmorrhage; *above* which, spontaneous placental detachment and hæmorrhage cease. If, through the successive active contractions of the longitudinal muscle, all that part of the placenta which had been originally adherent within the cervical zone, be detached; and if, as is the constant tendency of Nature, these intermitting active contractions, and the continuous tonic contraction going on in the intervals, arrest the hæmorrhage, a stage is reached when the labour is freed from all prævial placental complication; the cervical placenta has become changed into a lateral placenta; the labour is, in all respects, a *natural labour*.

It is important to determine the exact position of this lower Polar circle or boundary-line between hæmorrhage and safety. The means exist of defining this with tolerable accuracy.

In the first place, if we reflect that the lower segment of the womb must open to an extent corresponding to the circumference of the child's head in order to permit its extrusion, we shall, by noting the amount of necessary recession or shortening of the neck of the womb, in order to reach this extent of expansion, obtain a measure of the original depth of the cervical zone, the region of prævial placental attachment. The following diagram will serve to illustrate this position:—

FIG. 7.



Diagram showing a lateral placenta descending to (AA) the boundary line between the meridional and cervical zones. In this case the placenta descends to the very point of fullest expansion of the os, and therefore remains just within the limit of safe attachment. The space between AA and BB, is the necessary range of orificial expansion.

This point may be further demonstrated by the following simple proceeding:—Take a foetal skull, and marking the left parietal protuberance for a centre, stretch a vulcanized india-rubber ring over the circle of greatest circumference of the skull, preserving it at equal distances from the centre. This ring will represent exactly the os uteri at the utmost stage of expansion necessary for the passage of the head. To this extent the os uteri *must* expand; beyond this, it *need not*, and will not, expand. It, therefore, marks the limit between the cervical—or, more properly speaking, orificial—and lateral portion of the uterus.

If we now measure the distance between the presenting parietal protuberance of the foetal head and any part of the line of greatest circumference, we shall have the utmost extent of the cervical zone. In a full-sized foetal head this distance is about three inches. If we now describe a circle within the womb at three inches distant from the os, we shall have drawn the Lower Polar Circle, or boundary-line, between hæmorrhagic and non-hæmorrhagic placental attachment.

There is another evidence distinct from, but confirming, the preceding. If, after its expulsion, we examine a placenta, the edge of which, at the beginning of labour at the full term, had been felt reaching to the edge of the os uteri internum, we find that part which had been adherent within the cervical zone, and which had been consequently detached, infiltrated with coagulated blood, its substance perhaps indurated, and altogether presenting an appearance quite different from that of the mass of the organ which had adhered within the meridional zone, and which had only become detached after the expulsion of the child, through the general contraction of the womb. This part is usually so well defined as to admit of being measured. It is usually found to vary from three to four inches in length. This distance from the os will bring us again to the Lower Polar Circle.

I believe, however, that the boundary-line of safety is often practically reached before the expansion of the mouth of the womb has reached the full diameter of the child's head. I have observed that the hæmorrhage has completely stopped when the os uteri had opened to the size of the rim of a wine-glass, or even to a lesser size. In ordinary labour, when the bag of membranes or the child's head is driven down upon the os by the pressure from behind—that is, when expulsive pains succeed to the preliminary dilating pains, the presenting part becomes a mechanical distending or stretching power. The os, partly opened by the active shortening of the longitudinal muscular fibres, is fully opened by the distending cone driven through it, as an indiarubber band is expanded. Thus it is that a part of the opening of the os uteri is gained by a process that does not involve detachment of placenta.

APPLICATIONS OF THE NEW PHYSIOLOGY OF
PLACENTAL ATTACHMENT TO THE TREATMENT
OF PLACENTA PRÆVIA.

The rules of treatment at present in force have all been dictated or influenced by theoretical doctrines essentially erroneous. One word in especial has exerted a most tyrannical and mischievous influence: the word "unavoidable hæmorrhage," being assumed to embody the whole theory of placenta prævia, has created and maintained a blind and indiscriminating belief that interference, in the form of forced delivery, is imperatively called for. A striking word too often catches the assent by postponing investigation, and, like the sword of Alexander, cuts the knot it cannot unloose. The cases of placenta prævia, as they are met with in practice, offer considerable varieties of kind, of degree of danger; they cannot be treated on one uniform plan. We are not in all cases of urgent hæmorrhage to force the hand through the os uteri and extract the child; we are not in all cases to force the hand into the womb and detach the whole placenta. There are cases in which either of these operations is more dangerous than the flooding itself. Nor have I a panacea to offer in lieu of these operations. Although I believe that a full appreciation of the theory I have enounced is essential to the intelligent conduct of any given case of placenta prævia, I do not pretend that the particular mode of treatment which is the more direct deduction from this theory is universally applicable; but it supplies a new, an additional remedy, often applicable precisely when the usual modes of treatment are either impracticable or dangerous.

1. I shall adduce evidence to prove that dangerous, and even fatal, flooding may occur at so early a stage of labour that all methods of forced delivery are absolutely excluded.

2. That in another class of cases, in which it has been presumed that circumstances admitted of forced delivery, the operation itself proved dangerous, and even fatal.

The woman may die before delivery is practicable. Fatal hæmorrhage may occur from a very small detachment of placenta, and before the os uteri has undergone any material dilatation. Thus, Professor Davis says "he had met with many examples of even fatal results of profuse uterine hæmorrhage unaccompanied by any amount of dilatation of the orifice of the womb." ("Principles and Practice of Obstetric Medicine," p. 1040.) Professor Hamilton says that "in the month of September, 1816, he was called to two cases where the patient seemed to be *in articulo mortis* from the deluge of the discharge, and where nevertheless the os uteri was obstinately rigid."

But, in the presence of even the most terrible flooding, we are warned in the most emphatic manner, even by those authors who advocate forced delivery as the only hope, against forcing the hand through the os before this structure is

dilated or dilatable. Dr. Edward Rigby says: "In no case is it proper or safe to force delivery by artificially dilating the os uteri where it is contracted and unyielding; but *when the placenta is presenting it is peculiarly dangerous*, for even slight laceration of the os uteri will be followed by serious consequences;...its vessels are immensely dilated, and large ones are ruptured which cannot be closed by the firmest contraction of the womb." Nægele has also proved that death has been caused by the continued hæmorrhage proceeding from an os uteri so injured.

Dr. Collins records the following history:—

CASE 9.—"There being no chance of life without speedy delivery, we determined to make the attempt, *though the parts were badly prepared*. The hand was cautiously introduced:...great debility succeeded the operation, with a slight discharge of blood at intervals. . . . On examining an hour after, a laceration of the neck of the uterus was discovered, commencing at its junction with the vagina. . . . Dissection verified the result of the vaginal examination."

Taught, no doubt, by such instances, this excellent author emphatically says: "I know of no operation more truly dangerous both to mother and child than the artificial dilatation of the os uteri and turning the child."

Cases such as I have cited are by no means exceptional. Our clinical records teem with instances of resolute, I might say desperate, turning, with the view of saving the patient, where the operation, not the flooding, was shown to have caused her death. Let me quote one more, out of several, from that rich storehouse, the "Clinical Midwifery" of Dr. Robert Lee (p. 158):—

CASE 10.—"On the 22nd February, 1840, I examined the body of Mrs. C—. A great uterine hæmorrhage had taken place spontaneously six weeks before, when she was seven months pregnant. Another took place on the 19th February, which continued till the evening of the 21st, when her medical attendant, *with some difficulty*, introduced the hand into the uterus, perforated a portion of the placenta, and turned the child. The head was extracted with difficulty. The placenta soon followed, but she soon after began to sink, and died in an hour and a half. There was an extensive laceration in the mucous and muscular coats of the cervix uteri, on the left side, and a smaller and more superficial rent on the right side. The placenta had adhered to the whole circumference of the cervix."

The following case, also from Dr. Lee, exemplifies in the strongest manner the proposition before us:—

CASE 11.—A lady in the eighth-and-a-half month had been attacked with uterine hæmorrhage a month before. Two other attacks, at intervals of several days, followed. "At one o'clock Jan. 12th, 1839, the hæmorrhage was renewed to an alarming extent, without any pain; about a quart of blood was suddenly lost, and she became extremely faint. At four A.M. the discharge still

continued. . . . The placenta was felt adhering all round to the neck of the uterus, which was thick and rigid and very little dilated. The effect produced by the hæmorrhage was so great that *it was evident death would soon take place if the delivery were not speedily completed*; and the state of the orifice was such that it was certain the hand could not be passed but with the greatest difficulty. At eight P.M., Dr. Merriman saw her with us, and agreed that immediate delivery was necessary. I passed the right hand into the vagina, and insinuated my fingers between the uterus and placenta at the back part, and reached the membranes. But the rigidity of the orifice was so great that, though I employed great force for a considerable time, I could not succeed in getting the hand into the uterus. Dr. Merriman recommended rupturing the membranes, and I was proceeding to do this with the fingers, when I felt one of the feet of the child, which I grasped, and brought down into the vagina, enveloped in the membranes, which then gave way. Nearly half an hour elapsed before the version could be completed, and when it was effected, the neck of the uterus grasped the neck of the child so firmly that I experienced the greatest difficulty in extracting the head. A great discharge of blood instantly followed. The placenta was removed, and every means employed to stop the hæmorrhage; but the breathing became hurried, the extremities cold, and she died in less than an hour after delivery. Dr. Merriman informed me that a patient of his had actually died under similar circumstances before the head could be extracted."—(p. 156.)

If such are the lamentable results of forced delivery under desperate circumstances, what are the results of forced delivery under circumstances presumed to be favourable? The situation is still full of danger.

At p. 118 of Dr. Collins' book we find the following case:—

CASE 12.—"D.C.—, at her full time, was brought to hospital with profuse hæmorrhage, the blood literally flowing away from her. Finding the pulse almost imperceptible, the os uteri being partially dilated and in a relaxed state, the hand was passed, and the child delivered by the feet. The hand was introduced immediately afterwards for the removal of the placenta; the uterus acted well, and expelled both. From the moment of her admission, cordials and stimulants were freely given, which, after delivery, were occasionally combined with opiates; notwithstanding which, as also the sedulous application of cold, pressure, &c., a slight discharge of blood continued, and she died in two hours. On dissection, the intestines were found completely blanched; the uterus was contracted to the ordinary size. On making a section of it, a rent was discovered in its mouth, which was evidently the cause of the continued draining. This injury, no doubt, occurred in the delivery of the child, although it was effected with great care, with no difficulty, and very little exertion."

I have no desire to pass over the fact, that in many cases the os uteri, undilated at the time, yields with tolerable facility before the hand, and admits of turning with safety; or another fact—one of great importance—that occasionally, through a happy coincidence of skill and chance, the feet of the child may be seized by two fingers, and turning performed without the necessity of passing the hand into the uterus at all. Neither of these fortunate occurrences can be counted upon. The voice of experience is loud as to the dangers of turning even where there is no placental presentation. It is decisive in the cases we are now considering.

We have then three formidable facts before us:—

1. The woman may die from flooding so early, before the dilatation of the os uteri, that forced delivery is out of the question.

2. If forced delivery be attempted before the os uteri is dilated, a fatal result is eminently threatening.

3. If forced delivery be performed when the os uteri is dilated, it may contract around the neck of the child; and even if it do not, such injury may be done to the womb in the extraction, that death may follow.

Such, then, being the danger of forced delivery, a remedy is urgently required to replace, in certain cases at least, this operation.

Do we find that remedy, that resource, in the artificial total detachment of the placenta?

APPRECIATION OF THE METHOD OF ARTIFICIAL TOTAL DETACHMENT OF THE PLACENTA.

Two things must be proved before we shall be justified in answering this question in the affirmative.

1. That the total detachment of the placenta previous to the birth of the child will arrest the hæmorrhage.

2. That the operation itself is one that can be accomplished (I mean in the class of cases we are now considering) with safety.

A subsidiary question is involved as to the fate of the child in cases where this operation is performed. This question I propose to examine by itself on another occasion.

1. I will at once state that many authentic cases are now recorded in which the hæmorrhage ceased after the presumed total detachment of the placenta, either spontaneously or artificially effected. But it must also be stated that cases not a few are known where the hæmorrhage continued under these circumstances.

In approaching this question I must at the outset declare my conviction that it is not to be decided by statistics. I believe that this opinion is now generally entertained by the profession. The statistics, at least, that have hitherto been put forward have satisfied no one. We must not give up physiological reasoning, or individual clinical experience, to a mass of figures which profess to be the expression of facts similar in nature. From

the moment that all the details of a case are eliminated in order to squeeze out one or two particular facts to form part of a statistical phalanx, we lose almost everything that is instructive in the case, and run the most imminent danger of falling into false conclusions. We all know that a single pregnant instance of a fact well observed is often absolutely decisive as to a physiological or pathological law. There are individual facts against which no array of statistics can avail.

I say this without any desire to depreciate the value of the application of the numerical method to medical inquiries, but rather with a view to exact the most scrupulous care in our appeals to this method. I have myself been within the sphere of the influence of that great physician who has so strenuously asserted the power of statistics in solving the difficult problems of medicine. At the Hôpital Beaujon, and in an occasional visit at the sittings of the Société d'Observation, I have caught a spark of statistical enthusiasm. But a rigid criticism of the fundamental facts which have been bound together into so called statistical tables, showing the various conditions of placenta prævia, has convinced me that if we would respect the first rules of statistical science, we cannot, without risk of endless fallacies, subject the greater number of these facts to any statistical operation.

The last great statistical work on Placenta Prævia is that of Dr. Trask.* It is a work of great research, industry, and merit; but I could take any one of his tables, and point out numerous cases which it is quite arbitrary to range in the columns where they help to swell an imposing aggregate, and are assumed to strengthen by accumulation one particular deduction. And if I doubt his facts, if I doubt the propriety of marshalling them in the order in which he has placed them, how can I trust his conclusions? These objections apply with infinitely greater force to the other tabular arrangements of cases of placenta prævia, collected with so much labour and skill, for the purpose of proving the superior advantages of wholly detaching the placenta. The objections I urged against these tables some years ago have been sufficiently recognised by subsequent writers. Dr. Trask especially has avoided the gross error pointed out by me, of confounding together cases of spontaneous and cases of artificial, total previous detachment of the placenta. I need but repeat that things different in nature are added together, compared, and made the foundation for practical conclusions. The practice of gathering together from many different writings cases presenting some general features of likeness, which have been observed from different points of view, through many different media, and therefore probably differing in many essential points, must necessarily be unfit for scientific comparison. No after-analysis, no after-synthesis, can compensate for the want of original essential details.

Let us return to individual facts and details. Dr. Trask has collected 36 cases in which there was previous spontaneous expulsion of the placenta. In 13 of these we have no information as to whether hæmorrhage followed the total detachment of the placenta or not. In some moderate hæmorrhage did continue. In the majority, there being active contraction of the womb, the grand hæmostatic agent—there was no hæmorrhage. Dr. Trask has next collected all the cases known to him where the placenta had been separated by the hand. These amount to 66. In 35 of these it is stated, that the hæmorrhage ceased *immediately* and *entirely* after detachment. In the remainder the information is vague, or it is stated that more or less hæmorrhage continued.

Now, to exhibit clearly the essential difference in the two classes it is only necessary to state that the persistence of hæmorrhage was more frequent after artificial than after spontaneous detachment, and that more deaths occurred. The fact is that in the spontaneous cases the great characteristic was active contraction; and in the artificial cases, relaxation and exhaustion. I will quote one case of continued hæmorrhage after spontaneous separation from Dr. Lee;* although included as a recovery in Dr. Trask's table, he has omitted to record the continuance of hæmorrhage.

CASE 13.—“On the 8th of February, 1830, I was called to a woman residing in Falconberg-court, who had been attacked with profuse uterine hæmorrhage at the end of the seventh month of pregnancy. The placenta was protruding through the orifice of the vagina. I immediately extracted it, and a dead child followed. A great hæmorrhage succeeded, and she remained for a considerable time insensible, without any pulse to be felt at the wrist. She, however, gradually recovered.

Dr. Johnson, of Dublin, is quoted by M'Olintock and Hardy, as having “seen an instance where the hæmorrhage continued with little abatement after the placenta had been expelled spontaneously, so that the hand had to be introduced, and delivery completed by turning.” This case is not quoted by Dr. Trask.

These cases establish that there is no specific virtue in total detachment of the placenta in arresting hæmorrhage. The arrest of the hæmorrhage is therefore due to some other cause. Now, an earnest, and, I believe, a candid analysis of the cases of arrest of hæmorrhage ensuing upon detachment of the placenta, has left no doubt upon my mind that in many of these cases the hæmorrhage stopped under the influence of that preservative process which I have described. It stopped, not because the placenta was wholly detached, but because the detachment had reached that physiological limit, that boundary-line which I have pointed out. Thus, in the tables of Professor Simpson, I find many cases in which the hæmorrhage had already ceased *before* the placenta was wholly detached. Again, it is reasonable to assume that there are other cases in which the

* Statistics of Placenta Prævia. By James D. Trask, M.D. Philadelphia, 1855.

* Clinical Midwifery, p. 146.

placenta was *not wholly* but *only partially detached*, when it was observed that the hæmorrhage had ceased. If the tables prove anything, they contain quite as much evidence in favour of partial detachment as in favour of total detachment.

We are, then, amply justified in concluding that the artificial total detachment of the placenta cannot be relied upon to arrest the hæmorrhage.

IS ARTIFICIAL TOTAL DETACHMENT OF THE PLACENTA AN OPERATION SAFE IN ITSELF?

Upon this point positive evidence is deficient. It is to be feared that a larger proportion of the successful than of the unsuccessful cases have been published. When the woman has died, we have not had recorded sufficiently minute accounts as to the state of the os uteri—whether injured or sound—and other particulars, to enable us to distinguish how much ought to be attributed to the hæmorrhage, and how much to the operation. We must, then, consider the operation in itself. What is the degree of manual violence necessary to effect the entire separation of the placenta? In precisely those cases which are the most urgent, where hæmorrhage is profuse, and the os at the same time undilated and rigid, it is difficult to conceive that the *whole* placenta can be detached without introducing the whole hand. But whether the whole hand be introduced for the purpose of turning the child or detaching the placenta, the effect upon the uterus *quoad* forcible entry must be the same. We have seen what these effects are when discussing the dangers of turning. No doubt the forcible extraction of the child after turning is an additional source of danger. But the violent opening of the womb is the first danger. The total separation of the placenta in cases of rigid, undilated os is, therefore, excluded on the same grounds as is turning. It is true, cases are cited, in which it is said that “two fingers” or “one finger” were passed into the os, and sufficed to detach the placenta. It appears to me that these cases are not what they are assumed to be. Unless the whole placenta lies in a mass closely over the centre of the os—a case infinitely rare—it is next to impossible that it can be wholly detached by one or two fingers passed through the os. In the great majority of cases, the chief bulk of the placenta rises to a considerable distance up the side of the uterus, where it requires the whole hand to follow it. I refer to the case mentioned in the first of these Lectures for an example where the placenta reached from fundus to os; and to the general law, described in Lecture I, that in cases of cervical or cervico-oral placenta, the placenta is *commonly* spread out over a large superficies.* I conclude, therefore, for this reason, that some more of the cases chronicled as examples of the arrest of hæmorrhage by totally

detaching the placenta were, in reality, examples of *hæmorrhage ceasing on partial detachment*.

Let me read a case in illustration. It is drawn from Dr. Trask, to whom it was communicated by Dr. Bland.

CASE 14.—Dr. Bland was called at half-past ten P.M. to Mrs. B——, aged thirty; fifth or sixth labour; previous good health. The first intimation of approaching labour was, that feeling a desire to urinate, she availed herself of a closed vessel, and on arising from it, to her no small alarm and astonishment, it was observed half-full of blood. The hæmorrhage continued after she resumed the recumbent posture in such excess as to saturate and pass through the bed, running in a stream upon the floor. “I was immediately sent for, and found her as follows:—Great alarm, countenance blanched, pulse weak and frequent, excessive restlessness, and constant discharge of blood. The os tincæ was soft and dilatable, and open to the size of a dollar. In attempting to introduce my finger to ascertain the presentation, it was obstructed by the placenta on every side, the right excepted; here, with some difficulty, the finger was introduced.” Dr. Bland considered that it had originally adhered on all sides. “On a more careful examination for some inches above the orifice, especially on the left side, the placenta was discovered to be unequally separated from the inner surface of the uterus, and the hæmorrhage proceeded from these unequal separations.” This was clear to my mind from the fact that whenever I placed my fingers upon the placenta, and gradually and firmly pressed upon the parietes of the uterus from which it was separated, I completely arrested the discharge. For some half hour the hæmorrhage was completely controlled by these means. “Effective labour-pains having now almost entirely ceased, and discovering, whenever the hand was withdrawn, the hæmorrhage returned with increased violence, I determined to turn and deliver by the feet.” Before acting upon this determination, in accordance with the suggestion of Dr. Simpson, *he introduced the finger, carefully separated the placenta, breaking up the irregular adhesions, and by this means permitting the uterus to contract equally and regularly upon its contents; “the result of which, to my gratification and astonishment, was the entire cessation of the hæmorrhage, and consequent danger.* I now pushed the part of the placenta that obstructed the progress of the head to the left side, and held it there with my hand to prevent its descent before the head. I paused a few moments to consider the course to be pursued. In the short time allowed for thought, I determined to prevent, if possible, the descent of the placenta before the head, and to sustain it until effective pains could be excited. To accomplish this, I gave thirty grains of ergot. In fifteen or twenty minutes I discovered considerable uterine action, which increased steadily, resulting, in about half an hour, in the birth of the *child, alive and vigorous*, at about two P.M. There was no bleeding

* I have recently seen, in Dr. McChesnut's museum at the Dublin Lying-in Hospital, a most interesting specimen of a uterus with placenta prævia, which strikingly illustrates this position. The placenta extends from the os to the fundus, covering an extensive portion of the area of the uterus, the greater part being quite beyond the reach of one or two fingers.

afterwards; the placenta was easily withdrawn; and mother and child are doing well."

Dr. Bland states that his motive in preventing the descent of the placenta before the child, was, "that the supply of arterial blood might not be entirely cut off. Though all direct connexion was of course destroyed (?) by the separation of the placenta, the child appears to have survived an unusual length of time, and was born *vigorous*, not *asphyxiated* as might have been expected."

A careful analysis of this instructive case cannot leave a doubt that the placenta was not, as supposed by Dr. Bland and Dr. Trask, *entirely* detached. It is hard to believe that by merely passing a finger into the os, he could reach far enough to separate the whole placenta. It is still more difficult to believe that had the placenta been entirely detached, the child would have lived on for half an hour, and been born "*vigorous*, not *asphyxiated*." Dr. Bland had, in fact, while attempting to perform, and believing that he had performed, Dr. Simpson's operation, unconsciously performed that recommended by Dr. Cohen and myself. It was fortunate for the child at least, if not for the mother also, that he accomplished less than he intended.

(To be concluded.)

Practical Lectures

ON THE

MANAGEMENT OF THE DIGESTION IN DISEASE,

*Delivered during the Summer Session of 1857, at
St. Mary's Hospital,*

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LECTURE V.

ON DIARRHŒA.

In every mucous membrane there is going on at the same time secretion and absorption, but in different parts one or the other is normally in excess. Thus in the stomach it is *Secretion* that is most important for the digestion of nourishment: and all that impedes the secretions and their mixture with the viands is a prime consideration. But in the second parts of digestion—that is, during the passage of the aliments through the small intestines—it is *Absorption* that most attracts our interest, and it is any impediment to that act which produces morbid phenomena.

When the absorbing power of the intestines is defective, the consequence is an excess in the *quantity* of matters which pass through; that which ought to be taken up is carried along with the normal draught, and so constitutes a true *Diarrhœa*.

It is of great practical importance to distinguish this from the mere *frequency* of evacuation, which is quite consistent with a natural or even deficient amount of *fæces*. The number of motions, or the

number of times an inclination is felt to void them is often increased, when less than the average quantity may be passed in the twenty-four hours. This is of the nature of *teneamus*, and arises from an abnormal state of colon or rectum; whereas true *diarrhœa*, as aforesaid, depends on defective function of the *ilia*.

The prevailing contents of the stools constitute the best principle of division; and according to it we may speak without being misunderstood of *Bilious*, *Watery*, *Muco-purulent*, *Bloody*, and *Putrid* *diarrhœa*.

Bilious *diarrhœa* is the simplest form of the disorder. Bile, normally poured out by the liver to the extent of from three to four pints a day, merely requires not to be concentrated by the intestinal absorption, to add very largely to the excrements. Its presence is declared in them by its well-known smell, and by a colour exhibiting various shades of yellow, brown, and olive-green, according to its absorption of oxygen, and mixture with *fæces*.

This arrest of the absorbing power of the intestines and consequent rejection of bile mixed at first with *fæces*, and when the bowels are emptied, augmented by the exudation of water from their parietes, is what so often takes place temporarily from the impression of cold, from irritation of the alimentary canal by unwholesome food, and from mental emotion. It is possible also that the qualities of the bile itself may be altered in some cases, or its quantity increased. It may be changed by medicines, as by calomel or by senna, and so rendered incapable of absorption, and be poured through the *ilia* without their being in fault. Congestion of the portal system, such as is especially frequent in Europeans resident in warm climates, causes the bile to be at one time deficient, and afterwards to be poured out in excess. Irritation of the stomach and duodenum causes it to be retained in the liver and gall-bladder till it is unfit for absorption. In both these cases it is rejected by the bowels and constitutes *Bilious* *diarrhœa*.

You must be very careful to distinguish this symptom from a different one, often confounded with it—viz., the presence of a bright, grass-green matter in the stools. This is not bile at all, but, in reality altered blood, and denotes congestive inflammation of the mucous membrane, of course requiring very opposite treatment. Your best aids to diagnosis are, first, the *Smell*: in real *bilious* stools, the odour of the hepatic secretion can always be perceived, in spite of the *fæces* mixed with it; and at the same time it always prevents putrescence, or even counteracts the incipient putrescence of undigested aliments; while in the grass-green stools the smell is not of bile, but more or less cadaverous or putrid. Secondly, the microscope exhibits in the mucus, which always is present, the usual globules of mucus and pus, with small shreds of fibrine and blood-globules.

In *Watery* *diarrhœa* it is probable that there is increased exhalation of aqueous fluid from the blood-vessels of the intestines as well as an arrest of its absorption. In this form, when pure, if the

fæces are retained by a voluntary effort, they may be concentrated nearly to their normal condition by the removal of the water, and thus a test afforded that their state depends merely on the addition of this constituent. Thus, for instance, if you take a saline purgative, you may feel several pints of fluid rolling about in the bowels; but if you resist the inclination to stool, it goes off at last, and you void afterwards little more than the ordinary amount of semi-solid fæces. It is not so in bilious or other diarrhœas, except the watery.

Watery diarrhœa, when not arising from the anti-osmotic action of neutral salts, indicates a congested state of the venous plexus of the alimentary canal, and a consequent morbid proneness to exhalation and deficiency in absorption. The vitality of the mucous membrane is deficient, as is shown in cholera and low fever; and if not restored, local death, exhibited in ulcers and sloughs, must be the result.

The exhalation, however, tends to become habitual, and so continues beyond the period of congestion, so that the whole mass of blood is relieved of its water, and thus dropsical swellings may be re-absorbed and passed off through the bowels.

In *Muco-purulent* diarrhœa, water is in excess, but the characteristic is the presence of mucus or pus mixed with it; in which also there are, in acute cases, shreds of fibrine, blood-globules, and flakes of the peculiar epithelium of the bowels.

Should any of these products of inflammation be alone, separate and unmixed with the fæces, then it is probable they come from the colon or rectum; but if they are mixed up with a large quantity of watery fluid, and still more, if that watery fluid shows itself to be the serum of the blood by coagulating with heat, then there is little doubt of their source being the mucous membrane of the ilia, whose morbid condition it consequently indicates. The fluid in muco-purulent diarrhœa is always highly alkaline, and if examined with the microscope, crystals of ammonio-magnesian phosphate are found scattered through it. If allowed to stand, it separates into two distinct parts: the one *serous*, varying in colour from complete whiteness and transparency through all the shades of yellow to deep brown, or, where blood is present, to red and black, in which are the flakes of fibrine, the ammoniacal crystals, and floating globules; the other, *sedimentary*, consisting principally of grey, granular matter, the debris of food and more or less colouring matter of the bile and semi-digested blood.

The degree of serosity and the proportion of the products of inflammation in the first, show the extent to which inflammation has gone in the mucous membrane. Whiteness, bloodiness, putridity, alkalinity, being bad signs; yellowness, opacity, the smell of bile, and the absence of putridity, being good.

The second, or sedimentary, portion proves the condition of the general system rather than that of the ilia in particular. If it is copious in proportion to the fluid, then the normal function of destructive assimilation is shown to be little inter-

fered with; if it is scanty, this important process is arrested, the effete morbid tissues are not being removed from the body, and a more grave state of affairs exists. The quantity of solid sedimentary matter is the best test you can have of an advance towards health, or departure therefrom, in all cases where there is this state of bowels.

The most common examples of muco-purulent diarrhœa are found amongst acute diseases, in low fever, in cholera, enteritis, and dysentery, especially in the teething dysentery of children. Amongst chronic diseases, ulceration of the bowels, whether a consequence of phthisis or low fever, is the most usual cause.

Bloody diarrhœa, where the blood is in small streaks in the mucus, or slightly mixed with the serum, or mixed with the grass-green mucus above described, indicates an inflammatory state. When it is in clots, either black or fibrinous, with the globules partially washed away, it shows that a blood-vessel of notable size has been opened into, probably by ulceration. Should pus be mixed with it, the diagnosis of ulceration is confirmed. Black, semi-digested blood, precipitated by standing with the sediment of fluid stools, comes from high up in the alimentary canal, as it indicates its exposure to the gastric juice. It not unfrequently comes from the stomach itself.

Putridity of the stools in diarrhœa always shows that there is an imperfect quantity of bile in them, one of the most clearly-ascertained functions of that secretion being to prevent the chemical decomposition of albuminous matters. This may arise from two sources—namely, the food taken, or the albuminous secretions into the alimentary canal. A close examination of the stools will generally distinguish them. If it is non-digested food which is decaying, then the solid constituents of the fæces are bulky, pale, containing large lumps of still paler substance visible to the naked eye. And if these are examined by the microscope, they will be found to consist of muscular fibre, fat, and other parts of victuals, often swarming with live infusoria and vibriones. This occurs from time to time in all cases of deranged digestion. If the fætor arises from the albumen of the exhaled serum, it will be observed to be situated in the most fluid part of the motions, which are like the washings of macerated flesh, while the solid part is scanty and comparatively unaffected. This shows a much more serious state of the vital powers, and in severe complaints, such as low fever, is usually the harbinger of death. It is often joined to a peculiar mouse-like smell in the sweat.

In some instances of mucous flux and indigestion in the upper part of the alimentary canal, the stools are acid from time to time. There is nothing special in the pathology of this. It arises simply from so much acid being formed from the decomposition of food, that it cannot be neutralized by the alkaline juices. Sometimes the acidification takes place in the stomach, sometimes in the cæcum, during the delay of the decomposing aliments there. In the latter case considerable

pain is often experienced in the right iliac region, and in the course of the colon just before the evacuation.

In all forms of diarrhoea from affections of the small intestines the evil is twofold: first, the aliment, which ought to contribute to the support of the system, is hurried through the abdomen, and so the supplies are cut off; and secondly, destruction is carried on at an increased rate by exhalation from the mucous membrane of the bowels. The stick is being cut away at both ends, and hence there is nothing which produces such rapid emaciation. Where *soi-disant* "diarrhoea" is reported to you as existing for any length of time without emaciation, always let your suspicions be aroused; observe carefully whether the quantity of excrement really is in excess, or whether the ailment is not rather of the nature of tenesmus, and arising from the colon or rectum. You will generally find such to be the fact, and must vary your treatment accordingly.

Sometimes diarrhoea seems to be the transference of a tendency to exudation of serum from another tissue to the alimentary canal. Such is that which sometimes comes on of its own accord, or may be artificially induced in ascites, and which certainly diminishes the effusion. Such is the diarrhoea of uræmia, which, however, does not usually relieve the anasarca, but rather increases it from the weakening of the blood which follows. Hence it is a very bad, almost a fatal, symptom in the latter disease.

The most important indication of treatment is connected with the diet. It must be such as does not require a perfect state of the digestive organs for its absorption, while, at the same time, it is nutritive to the patient. The most complete is milk and limewater. In feverish cases it may be iced, and soda water may be occasionally substituted for the lime. Keeping a person solely on this diet is often sufficient alone to cure all sorts of diarrhoea not dependent on a permanent chronic cause; and even where there is such a cause for it, very great temporary benefit is derived, which forms a better starting point for medicinal treatment than the previous state.

In a temporary diarrhoea without other disease the loss of the normal supply to the body is not of so much consequence, a short starvation perhaps does good to a person otherwise healthy. But in severe acute disease, or in long-continued chronic diarrhoea, this is an important consideration, and care must be taken to allow for it. Since food in the usual quantities at once cannot be borne, and is rejected undigested, give it very frequently and in small portions. The alkaline milk diet I have just recommended allows this to be done most conveniently. A jug of the liquid may be kept close at hand, and drunk from time to time, so that as much nutriment may be taken in the twenty-four hours as would be done by a healthy person without the alimentary canal ever being overloaded.

When there are lumps of feculent matter in the stools, and a smell like that of normal excrement,

give purgatives. Until you get rid of these remains of previous constipation, you will be sure to have a relapse of diarrhoea, though your medicines may check it for a time. Where there is no normal smell present, I have never found purgatives beneficial. This is a better rule than the routine practice of always commencing the treatment with a purgative—a plan which I have known very injurious in cases of chronic diarrhoea.

Where the products of acute inflammation are found mixed in the stools, such as white and opaque mucus, flakes of fibrine, epithelium, blood-streaked mucus, bright-green matter, &c., as above described, leeches, fomentations, warm hip-baths, and poultices to the abdomen, are the appropriate treatment, and should not be delayed. In the case of babies, the whole abdomen and loins may be fastened up in a large circumambient poultice, which they cannot wriggle away from, one or two leeches put on near the navel, and the bites allowed to bleed for some time. The drugs I would have most trust in are calomel, ipecacuanha, and carbonate of soda. Of the first and second equal quantities, and a double quantity of the third, may be made into powders, of which from four to six grains, according to the child's age, may be given every three hours.

Be very careful in infants to look to the teeth. The state of bowels may very likely be dependent on reflex irritation from the dental nerves. Lancing the gums will sometimes stop a most violent diarrhoea where the stools show evident proof of the inflammatory condition of the ilia. In teething infants, too, opium is of striking utility. I begin with half a grain of Dover's powder every three hours, increasing the dose by half a grain every three doses, till a decided *excess of sleepiness is produced by it*.

In low fever the presence of diarrhoea indicates to me the employment of mercury in the form of *mercury with chalk*. The effect of this drug is the increase of solid sedimentary matter in the stools; in other words, a restoration of the destructive assimilation going on in the body. The motions are diminished in number and in fluidity, but not in actual quantity. Thus the tissues devitalized by the typhoid poison are removed, and can be replaced by nutriment. I am used to take this increase of solid matter as an evidence and test of benefit accruing from the use of mercury, and as a prognosis of good.

Where in the absence of fever blood is passed by the bowels, the two most powerful means of checking it I have found to be turpentine and acetate of lead, especially the latter. Its direct influence as a poison on the bowels would have led to expecting this. If the hæmorrhage has gone on for some time, I am inclined to think it must be sometimes due to a clot distending the bowel, and preventing it contracting upon the bleeding spot, for certainly a dose of castor oil, in the results of which a quantity of pale clots were exhibited, has several times in my experience stopped hæmorrhage from the bowels.

The long continuance of diarrhoea from ulcera-

tion of the ilia must starve the patient. It tends also to prolong itself; for the weaker the system is, the more irritable are the sore places, and the less can the morbid actions they set up be resisted. It is right, therefore, to use direct means for arresting it. The best are such as blunt the sensibility of the ulcerated spots. The milk-and-lime-water diet should be used first, then chalk and opium, which appear to act on the sore mucous membrane just as they do on a raw blistered surface of skin. If these fail, sulphate of copper should be used in doses increased from a quarter of a grain up to two grains. If no good accrues after this, I suspect an error has been made in the diagnosis.

Where there is a simple flux of transparent mucus without fever, pain, or pressure, or any fibrine or blood in the motions, the vegetable astringents, such as logwood, bark, kino, and tannin, are often of great use. In such cases, too, I have prescribed iron with seeming benefit. I must, however, say, that I feel doubtful whether this form of flux is not rather due to the colon than to the small intestines in the great majority of instances.

Where the solid matter is copious, pale and fetid, consisting mainly of undigested food, inspissated bile may be given with benefit; the stools become darker, less fetid, and less frequent under its employment. This is particularly the case in children whose mesenteric glands are diseased. I am hopeful, too, that pepsine will prove a still more efficient remedy in the same cases, as it certainly diminishes the factor of the motions in the best way—namely, by promoting the normal solution of the food.

Acid diarrhœa indicates the free employment of chalk.

The use of opiates in diarrhœa must never be made a matter of routine. As a general rule, I have found them beneficial without consequent harm, in cases where there was tenesmus and frequent stools; but where the fæces are bulky and copious they appear to impede the natural secretion. Where the stools also are putrid, caution is required in their use. In the diarrhœa which so often accompanies and proves fatal in uræmia, they check, indeed, the debilitating flux, but they are apt to bring on coma.

In some cases of diarrhœa from chronic mucous flux of the intestines, without ulceration or acute inflammation, I have found riding exercise very beneficial. I suppose it is the gentle agitation of the abdomen, combined with the air and amusement, that proves of use.

In recommending the recreation of travelling to invalids subject to diarrhœa, you must be very careful where you send them to. The epidemic influence of cholera which has overspread Europe during the present generation, visiting almost every square mile of it several times during the last few years, has in many places left behind it a chronic endemic poison. The natives are, indeed, insensible to it, but few strangers escape becoming affected more or less, according to their idiosyncrasies. Strong persons find it only an incon-

venience, but an invalid is put in some danger, and certainly loses all the advantage of the tour. This is especially the case in the mountainous districts of the South of France, the Pyrenees, and Dauphiny, and in the volcanic regions bordering the Rhine, the Eifel and Moselle country, as well as those in the centre of France, the ancient province of Auvergne. All these places are attractive from their picturesque beauties, and therefore it is necessary that you should be warned of this evil attendant upon choosing them as the scene of a tour. You will see sometimes the whole number of strangers at a table d'hôte obliged to leave the room at once, and cause one another no slight inconvenience by tending all together in the same direction; and in the Pyrenees I have seen powders of chalk-and-opium put up as the regular concomitants of a day's walk. It must not be supposed that this is the result of the foreign modes of cooking. I have known English biscuits and porter, and boiled eggs, adopted as a diet without relief, though of course nothing foreign could have got into them. I believe the cause to be that which I at first represented it—namely, a poison left endemic since the passage of cholera through the country, but to which the natives have become acclimatised. That it is of late years only that it has been prevalent is shown both by local report and the omission of all mention of it from the work on "Climate," by Sir James Clark.

One source from which strangers contract this diarrhœa is an evil capable of, and rightly demanding, amendment: I refer to the filthy privies in continental inns. A gentleman, eminent in his profession and of good judgment, told me that, during a Pyrenean tour lately, he entirely escaped the diarrhœa which everybody else without exception suffered from, by adhering to a strict rule of never entering one of those disgusting holes, but worshipping Cloacina under the pure light of the stars. Invalids and ladies cannot so well manage this, unless they are rich enough to travel with carriages and servants and peripatetic waterclosets.

FLATUS IN THE SMALL INTESTINES is one of the most troublesome forms of wind. If it escape into the stomach, which is fortunately rare, the taste and smell are peculiarly nauseous, whilst it seems to have considerable difficulty in passing the ilio-cæcal valve. Hence it rolls about in the abdomen from the changes in position which the motion outwards of the alimentary masses involves, and causes the well-known and distressing "borborygmi," till it can get absorbed. The abdomen will often be distended for several days with it, without its being able to escape.

The persons most liable to this troublesome affection are anæmic and hysterical women; it follows also the small and contracted liver of spirit-drinkers, and sometimes is very annoying in cases of dilated heart. Some persons, also, in apparent health are habitually much troubled with it. I am inclined to attribute it under these circumstances to a naturally sluggish portal cir-

culatation, which does not so quickly absorb the contained air as a freer motion in the blood-vessels would enable it to do.

Flatus in the intestines is troublesome during the day, from the tumidity of the abdomen, and noise on motion, and pain in the side; but when it comes at night it causes still more inconvenience by preventing sleep. I cannot explain why this is; there is not enough pain or discomfort to account for it, yet a complete wakefulness and apparent want of desire for sleep commonly prevails. It is to be remarked, also, that it is in most instances made worse by opiates. Sometimes the patient will go to sleep easily and naturally on first lying down, and will then wake up in an hour or two, finding his abdomen tumid and uncomfortable, and will remain entirely without rest for the remainder of the night; or if he drop off for a few minutes into unconsciousness, it seems rather to aggravate than relieve the feverish restlessness, and to cause headache.

The most effectual remedy is finely-powdered charcoal, in doses of from ten to twenty grains, and of the aloes-and-myrrh pill just enough nightly not to act as a purgative. The air seems to be absorbed, and the peristaltic motions quickened, by this treatment. Should that not be effectual, you can employ strychnine in small doses in the pill.

It is scarcely necessary to say that indigestible articles of diet must be avoided, if the patient would prevent a recurrence of the complaint; and it stands to reason, also, that cold sponging and bathing, sea-water, and, in short, all hygienic remedies which improve the general health, will conveniently accompany the treatment.

I have known two cases of habitual looseness of bowels cured by marriage. In one of these the change was sudden and immediate: a gentleman from boyhood to the age of thirty-five had been used to have the bowels opened at least five times a day; a week after his wedding the number of evacuations was reduced to two, and before the year was out to one, daily. I presume it is requisite for the marriage to be a fortunate one—a Xantippe would not, probably, lead to the same result.

LECTURE VI.

COSTIVENESS AND CONSTIPATION.

THE opposite states to diarrhoea are "Costiveness" and "Constipation." In the former the quantity of faeces formed is too small; in the second, the expulsive power is deficient.

COSTIVENESS arises from deficient excretion into the alimentary canal. What proportion of the matters that ought to be thus got rid of comes from the liver we have not yet the means of ascertaining, but the main point, that they are derived from portal blood, we are justified in asserting; so that the solution of the former question is of the less importance.

That a great deal of the colour of faeces is

due to bile is familiar to us from the phenomena attendant on obstructed gall-ducts. But even when there is complete occlusion of the communication between the liver and intestines, the faeces by no means consist entirely of undigested food; there is in them a great proportion of a yellowish-grey granular matter which appears also in the healthy state, and which still makes up the bulk of the solid excreta.

In deficiency, therefore, of the excretive powers of the intestines generally (*vulgo*, "costiveness" or "biliousness"), there is a different substance retained than is the case when local lesion of the liver or gall-bladder obstructs the passage of bile. There is a partial retention of the whole matters destined for depuration from these quarters, instead of a complete retention of one constituent.

Hence there is not, as happens in mechanical retention of the bile, the well-known stain of jaundice communicated to the blood and skin, nor are the stools clay-coloured. But there is a dinginess and darkness of complexion, and the stools are scanty. The skin gets greasy and opaque, the countenance sometimes puffy and bloated, sometimes thin and pale, the lower eyelid especially sallow and discoloured. The sebaceous follicles on the *ala nasi* are stopped up with black matter.

There is in the patients thus affected seldom any decided emaciation, nor is there always even loss of muscular power; but still there is great sluggishness of body and apathy of mind, and often a miserable want of decision and energy. Digestion is accompanied by a good deal of discomfort and flatulence, but rarely by actual pain, and the distress does not begin till several hours after eating, so as to be with difficulty referred to any particular meal.

In the least complicated cases of arrested intestinal secretion the stools are dark, hard, and dry; but their appearance may be varied by several circumstances. Sometimes there is an augmented secretion of mucus, and then they are intimately mixed up with it, forming a black, slimy, almost gelatinous mass. Sometimes from the appetite not suffering, the patients will eat largely, and then there appears irregularly from time to time a quantity of fetid, semi-digested food, constituting a sort of diarrhoea, accompanied with pain and colic. And this diarrhoea will not unfrequently be the occasion of your patient's first coming to you, so that you might be deceived into a false impression of the case.

The congestion of the portal vessels in the upper portion of the alimentary canal is often followed by the same state in the lower, and thus piles are formed, which add much to the general distress.

Costiveness is a common accompaniment of anæmia, chlorosis, debility in males and females, of diseased heart, especially where the muscle is dilated rather than hypertrophied, of contracted liver, and, in short, of anything which makes the abdominal circulation sluggish. Sometimes it is found in cases of pulmonary tuberculosis, but

hardly ever before middle age. All those pulmonary cases in which I have seen it last long enough to be a marked feature have been examples of senile phthisis. It is often the first and most characteristic phenomenon of that change of system which takes place in females at the cessation of the catamenia. The stools get gradually more and more scanty as the uterine secretion also diminishes, the pulse grows feebler, the feet and hands more liable to get cold. There is evidently lessened vitality throughout the whole body.

No persons more frequently suffer from costiveness and its attendant "biliousness" (as the general appearance of the skin is named) than old Indians. The sedentary, routine life and high feeling are partly the origin of their liability. But in addition to this, the endemic diseases of the country are often the exciting cause. I have traced the commencement of the habit of body several times distinctly to an attack of dysenteric fever brought on by malaria. So that the Anglo-Indian who suffers in this way must not be always accused of previous excess.

The natural end of this state of things, if left unchecked, is the gradual progress from bad to worse. The decrease of destructive assimilation loads the tissues with effete matter, useless for the purposes of life, and a constant source of general discomfort. This impedes the constructive assimilation of food as well,—growth is arrested, the blood is not renewed, and hence progressive anæmia, weakness, want of nervous and muscular power, and probably in the end the degeneration of one or more of the viscera, and death from that cause.

One very striking accompaniment to the loss of destructive assimilation is the depression of spirits (*melancholy* is so named from the dark, scanty stools which were observed associated with it). It appears to me an universal rule in disease that the general discomfort is proportioned to the arrest of this vital process, and I am inclined to attribute it almost entirely to the influence of the retention of effete matter on the nerves of general sensation. In all maladies, both acute and chronic, you may observe the truth of this law. Mark, for instance, the commencement of a fever: the malaise is excessive; there are pains in the back, the head, the limbs, or, in milder cases, what the patients graphically call "all-overishness;" but when they get worse, and destruction commences,—the effete matter passing off as urea and increasing the specific gravity of the urine,—then no aggravation of the local symptoms, however much it may alarm their physician, and make his prognosis graver, prevents the general feeling of relief. Or watch a case of consumption: the deposit of tubercle may be insignificant, and is at all events in its first stage; yet the patient is depressed, despairing of cure. Why? Because the skin is sluggish, the bowels costive, the urine of low specific gravity; in short, there is evidence of the retention of effete matter in the system. But let this patient's tubercles soften, let there be

night-sweats, copious expectoration, diarrhoea—everything that prophesies ill—and who so full of hope as the poor blinded sufferer! Morbid states where destruction is in excess are the most fatal, but those where retention preponderates are invariably the most distressing.

Costiveness must be regarded as a disorder of the whole system, and not of the intestinal canal alone. The only effectual remedies are those advised under that conviction.

The objects of treatment must be: first, to relieve the body of the immediate presence of effete matter; and, secondly, to prevent artificially its reaccumulation till such time as a complete renewal of the tissues has taken place. Then the body ought to be able to take care of itself, and a cure may be said to have been performed. The attention to local disorders, arising from the successful study of morbid anatomy, has too much made us forget this main object of all medical advice—the replacement of morbid tissue by healthy. "*Renew my age*," was the chief earthly blessing prayed for by the inspired prophet; and physiology teaches us it should be the motto of the rational physician, for if he omits to rebuild the healthy, his care for the destruction of the unhealthy is all thrown away.

Purgatives, then, may very fairly begin the treatment; the immediate relief they give to the feelings of discomfort is great. But let not that relief be set down to the mere "clearing out of the bowels;" it is the cleansing of the blood which is the real object of the remedy, and the real cause of the relief. An inspection of what comes away shows you it has been newly formed: it is fresh bile and other natural constituents of recent fæces; not of those which have remained long in the canal.

Nothing is easier than thus with a vigorous blue-pill and black dose to drive away the patient's discomforts like a charm; and he is ready enough to cry out that no more medicine is required. But, what is the consequence!—the renewal of the blood and tissues not having had time to recover itself—there not being sufficient new-made blood to carry on vigorous life—the effete materials again collect, and the disease takes as it were a fresh starting-point. Again and again the coarse expedient is required, and at last fails to effect its object of giving relief.

To avoid this evil consequence, it is best to give no quickly-acting complete purgatives which directly deplete the abdominal plethora by serous exudation; but rather such as cause a gradual increase in the solid matter of the stools. Aloes and rhubarb are the best of these; and I find it also beneficial to combine with the drug resins which act as a tonic to the surface of the mucous membrane, and prevent the exudation of serum and mucus. Four grains of aloes-and-myrrh pill every night, will, in a week, produce all the good effect of a strong purgation; and it will produce it permanently instead of merely for a time.

All accessory food, that has the property of

arresting destruction, must be left off. Wine, beer, tea, and coffee, must, on this account, be excluded from the dietary; and milk, cocoa, whey, soda-water, Seltzer-water, &c., substituted for them.

Perhaps it is on account of their arresting destructive assimilation, that general tonics, such as cinchona and quinine, rarely agree well in those cases. I find it better to give pure bitters, such as oak bark, quassia, and gentian, which seem to act chiefly on the mucous membrane. Their use is to increase the appetite; and, when that object is attained, I leave them off; or, if it is attained without them, I do not begin.

Water is a very accessible remedy, and certainly a very rational one, when the destructive assimilation is deficient. The conclusive experiments of Dr. Böcker and of Dr. Falck,* show the increase of all interstitial metamorphosis by this agent to be in close proportion to the quantity taken within certain bounds; and all who have heard or read of the agreeable sensations experienced by patients during the water cure cannot doubt its power of removing morbid accumulations of effete matter in the tissues. In this lies its strength; for, as Dr. Böcker observed, "the demand for new tissue, as expressed in the sensation of hunger, keeps pace exactly with the extent of the metamorphosis." And if this demand is rightly supplied, the result must be a complete renewal of the body.

The testimony of experience to the use of water as a remedial agent, is exhibited in the patronage bestowed from the earliest times upon numerous springs whose saline constituents are even less than those of ordinary drinking water. Pfeffers, historically famous for freeing Martin Luther of his demon-haunted hypochondriasis, is still the resort of the invalid. It is situated in a most gloomy hole; and the copious hot stream that boils out of the rock is almost chemically pure. So really it can be nothing but *aqua pura*, that keeps up its reputation. The same may be said of the well known Gastein and Wildbad, the crowded Baden, imperial Plombières, of the French Aix, and our own long-frequented Buxton; for, practically speaking, the influence of the saline particles they contain must be reckoned for nothing. It is certainly nothing compared with the effects of moderate doses of water in Dr. Böcker's experiments.

We cannot, therefore, as physiologists, be surprised, in all diseases of arrested metamorphosis, at the benefit derived from the simple expedient of drinking water beyond the demands of thirst. Taken several times a day between meals it is a most efficient remedy. Warm hip-baths are also of great use, and can be borne even from the first by those reduced to extreme anæmia and lifelessness. Afterwards the cold sponge-bath, preceded and followed by friction to the skin, is

a most active promoter of life in the skin and capillaries. The raising the specific gravity of the water by the addition of salt prevents the chill which fresh water is apt to impart. So that even persons with cold hands and feet, and very great sluggishness of circulation, can bear to be sponged with brine.

Alkalies and neutral salts have the same action on the moulting of effete tissues that water has. Hence the repute of many really strong mineral wells. But care is requisite lest the same result should follow their use which is threatened by the unguarded use of purgatives. In cases where there is pure arrest of metamorphosis, without organic change in any of the viscera, I find the weaker the spring the better. Where, however, any organ is chronically degenerated, general consent seems to sanction even such waters as Vichy and Selters, with their large amount of alkaline constituents.

While pulling down the old house, be careful to be building up the new. Let full supplies of albuminous material be continuously kept up in such form as the absorbents love. Let milk, mutton, and bread be the staple diet, with the smallest quantity of anything else that human gluttony will submit to. If your patient be one of strong mind, the best and bravest thing is for him to carry out your advice himself. He will then have gained a victory, not only over the flesh, but over the spirit. But if he is no Epicure, and cannot attain to the dignity of being his own gaoler, do not be afraid of sending him to an hydropathic hotel. You will generally find the proprietors of these establishments willing to carry out your directions, and the situations of most of them are judiciously chosen for the advantages of air and amusement.

Once for all, the principle of scientific hydropathy—that is, the renewal of the body by water and food—the increase of growth secondary to the increase of moulting—is no quackery. It is not an underhand mode of doing nothing, like homœopathy,* but the *bonâ fide* employment of a powerful agent.

I know that medical men are afraid that in sending patients to water-cure establishments they may be abetting the pretensions which ignorant proprietors have put forth, of their treatment being a panacea for all ailments. In my opinion a contrary effect would follow; for the very fact of regular practitioners adopting the reagent as remedial, will show that science ranks it as a physical power; that, consequently, it will do as much harm in some cases as it does good in others; in fact, that like all medicines, it will kill as well as cure. This is indeed the

* I say "underhand" to distinguish it from the honest, though unauthorized, *well-meant expectation*, or the open avowal of trusting in Providence without using the reason which is His gift. Let it not be supposed such blind faith is extinct. I had an interview lately on insurance business with a man whose daily occupation was healing disease. "I follow," said he, "the method of St. James; I anoint with oil (taking a phial of it from his pocket) them that are sick, and the Lord raises them up." He then detailed to me statistics of the comparative duration of rheumatic fever treated in his way and by medical art, proving his point by "facts," just as homœopaths do.

* See Digestion and its Derangements, p. 217; and Zeitschrift der K. K. Gesellschaft der Aerzte zu Wien, April, 1854; and Virchow's Archiv, l. p. 150. 1858.

truth, and patients are as unwise to prescribe it for themselves, or on the advice of an hotel-keeper, as they would be to take arsenic or strychnine on the same grounds.

CONSTIPATION is often indeed added to costiveness, but is not necessarily connected with it. In it the *faeces* collect in some part of the abdominal canal, and give proof of that collection by being occasionally passed in considerable quantities at a time. In the stools there are portions more dried and concentrated than the general mass—*scybalæ* of various sizes and shapes, dark brown or black, and usually with less smell than ordinary *faeces*.

The most obvious cause of constipation is mechanical obstruction, the nature of which, under various forms, has been fully explained to you in the ordinary courses of medical and surgical lectures.

Simple atony of the colon presents a much more frequent and more curable cause. And not rarely a mucous flux of the stomach or intestines will originate constipation by enveloping the *faeces* in a slimy coat, and preventing their being moved on by the muscular contractions of the gut. Atony of the colon arises primarily in those who lead a sedentary life, and have that pale look which characterizes weak muscular fibre. It is more frequent in the old than the young; indeed, a diminished propulsive force in the large intestines may be considered as a normal consequence of advanced age. It is very usual in convalescence after acute fevers, and other debilitating diseases. Neglect of the natural call to evacuate the bowels, and the retention of wind in the colon, produces also this sort of torpidity by too long dilatation. Hysteria and nervousness in either females or males often spasmodically contract the rectum, so that the *faeces* are kept unnaturally back, and thus the same state of things arises as from neglected evacuation. The irritation of piles occasions a similar result.

Where there is a disposition in the colon to be atonic, this disposition is much aggravated, and sometimes first made evident by some kinds of diet more than others. It is a fallacy to suppose that indigestible articles of food "irritate," as it is called, the bowels; that is, pass on quicker than more soluble substances. The contrary is the case; and, as a general rule, the gradual and regular transmission of the mass is in direct proportion to the completeness of its digestion. No sort of food is so apt to be followed by constipation in atonic persons as that which contains a large amount of matter incapable of being acted upon by the digestive juices, such as the husks and stones of fruit, stringy half-cooked vegetables, in which, besides cellulose, there is the equally impracticable body, unbroken starch. All substances capable of being squeezed into an impenetrable mass, such as puff pastry and new bread; come under the same class of insolubles; and perhaps, too, gum and gelatine are liable to the same imputation.

The most successful practice in simple constipation is the free use of cold water enemata, and a long-continued course of small doses of strychnine. When there are no piles, the latter medicine may be advantageously combined with aloes. This treatment is not inconsistent with the administration of tonics, or whatever else may be necessary to relieve the disease in which constipation occurs; which disease of course requires to be removed before the local symptom will be free from risk of relapse. It is scarcely necessary to say that no treatment will avail if the bad habits which have induced the constipation are persisted in.

Where the constipation arises from mechanical impediments to the movements of the bowels upon one another, such as adhesions of the peritoneum, contraction from old ulcers, from past inflammation, or compression of the area of the gut, such as arises from tumours, from retroversion of the uterus, and the like, a more soothing treatment should be adopted. Then the enemata should be warm, and have an ounce of olive oil added to them. If there be localized pain, dissolve some opium in the oil, and put some leeches to the spot outside corresponding to the seat of pain. Hot fomentations and poultices containing fresh laurel leaves also give great relief.

The depending position of the *cæcum* makes it the commonest seat of *faecal* collections, and if you find it difficult to fix on any other spot, it is wise to take it for granted that this is the failing one, and direct your local application accordingly.

Do not be satisfied with the one or two very copious stools which will follow your efforts: the treatment must be persevered in until the bowel has recovered its tone, or there is great risk of relapse.

FLATULENCE IN THE COLON may be distinguished from that in the small intestines by percussion, by the absence of borborygmi, and by its frequently passing freely out *per anum*. It is a very usual accompaniment of constipation, and in that case has the same pathology, being to the air what the other is to the solid *faeces*. If the flatulence is a very marked symptom, a carminative, such as extract of rue, or a few drops of ether, may be added to the enema.

Milder cases of colonic flatulence, without marked constipation, are often found more difficult of cure than the severer. The reason is simply that which applies to all less inconvenient forms of disease—namely that patients will not take the trouble to be well except under strong compulsion.

Clinical Lecture

ON

A CASE OF FRACTURED RIBS, WITH WOUNDED LUNG AND EMPHYSEMA, FOLLOWED BY DELIRIUM TREMENS, AND COMPLETE RECOVERY.

By SAMUEL SOLLY, Esq., F.R.S.,

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JOHN B——, aged forty-seven, was admitted into Abraham's ward about half-past six A.M., June 11th, 1857, suffering from the effects of a fall from a ladder on a place covered with rough stones. It was stated by those who brought him to the hospital, that whilst on the top of the ladder, it slipped, precipitating him from a height of between twenty to thirty feet, and they considered that he received some of his injuries by pulling down the ladder on him, as he kept hold of it during his fall. He was perfectly sober, though wearied from extra work at the time. When taken up he was insensible, but when he arrived at the hospital he was conscious, and answered questions rationally, but was not disposed to speak. These details regarding the accident, and his mental condition at the time of his admission, are very important in connexion with his mental condition after he had been in the hospital some days. The fact of his being insensible immediately after the accident shows that there must have been some concussion; but that it was very slight is clear from the fact of his answering questions rationally when admitted, the distance of the hospital from the site of the accident being very small. His disinclination to speak you can well understand when you learn that his lung was wounded by the fractured rib; so that we must not look to the brain for an explanation of his torpor. He complained of great pain in his left side, and on examination three or four ribs were found fractured on that side. The exact number were not ascertained from the pain the examination occasioned him. On the right side no ribs were broken. There was a severe bruise at the lower part of his back; a slight scalp wound on the occiput, and also slight wounds on the nose and lower lip.

From his previous history it appears that about twenty years ago he was a sailor, but quitted the sea when he married; since that time he has worked in the Docks, and for the last fourteen years in the service of Alderman Humphrey. His wife states that about fifteen years ago he had an attack of brain fever, and afterwards had four or five fits, the last of which occurred about twelve years ago, since which he has never been at all affected in his head, and has generally enjoyed good health. His fellow workmen say that he is a civil, well-conducted man, that he is accustomed to drink a considerable quantity of beer

during the day, sometimes as much as seven or eight pints, but that he never gets actually drunk. He has also been in the habit of chewing a quarter of an ounce of tobacco daily for some years, but he does not smoke. He has had two or three slight accidents before this one.

The previous history in a case of this kind is of the greatest importance; and though there is often some difficulty in procuring accurate information, you should always take great pains to obtain all that is possible. Only a short time since, you watched with me a case of considerable interest, where a man was brought into the hospital having received a violent blow on the back of the head, causing severe concussion of the brain, followed by epilepsy and delirium tremens, cured by tonics and stimulants. In that case, a knowledge of the previous habits of the man guided us to a correct diagnosis of the true pathology of the case. In this you will find that the delirium and general aberration of intellect which followed were also explained by a knowledge of his habits of life. It is seldom that you can obtain a correct account from the wife of the patient; she will generally speak of her husband as sober if he does not come home drunk every night; whereas a man who drinks his six, seven, or eight pints of beer every day, though without being drunk, is a bad subject for an accident. The sudden removal of this amount of stimulus, which is necessary in the early stages of the treatment of such an injury, is very likely to induce delirium tremens. There was another habit in which he indulged which would tend to the same point—viz., chewing tobacco. I am not now going to dwell on the injuries inflicted on the human race by this weed. I am thankful to say that the observations which I made in this theatre some months ago, and the correspondence to which those observations gave rise in *THE LANCET*, have already produced a great abatement of the evil. I would, however, here remark, by the bye, that the information regarding the extent to which tobacco smoking was productive of insanity, which our own lunacy doctors have been unable to supply, has been given us from America. I have been told by some of those medical men who have had the charge of lunatics in this country, and, not being smokers themselves, can take a candid view of it, that it is very difficult here to separate the effect of tobacco from the effect produced by the intemperate use of intoxicating drinks, the habits being so generally associated amongst the lower classes of this country. The following passage occurs in the report of Dr. Kirkbride, of the Hospital of the Insane, Pennsylvania:—"Five cases were clearly attributable to tobacco. Common as is the use of tobacco in some of its various forms, its injurious influence on many constitutions is much more serious than is commonly supposed, and not unfrequently the cause of exceedingly troublesome and obscure nervous affections, which cannot be cured while its use is persisted in. The effect on many insane patients is so striking that an intelligent attend-

ant is often able to say without difficulty when it has been used to any extent. When occasionally gratified, the craving for it is very strong, but an entire disuse of it for a week will commonly obviate all serious annoyance from abandoning the habit, and I have never known any injury to result from its sudden discontinuance. I have no doubt that much advantage is gained from its use being strictly interdicted within the walls of an institution for the insane."—p. 24.

To return to my own patient: I have said that in addition to his habit of drinking every day six or seven pints of porter, that he chewed tobacco. I advert to the fact now to impress upon you the importance of gaining a knowledge of every habit to which your patients have been addicted, if you wish to treat successfully the disturbed functions of the brain. I have often pointed out to you the difference between the delirium ebriosorum—that is, the delirium of the drunkard—and the delirium e potu. In the former, the disease is anæmic; in the latter, hyperæmic. And always remember, that a man is a drunkard in a medico-therapeutical point of view even though he is never seen positively drunk, if he is repeatedly imbibing during the course of the day stimulating drinks.

In the true delirium tremens—the delirium ebriosorum—the brain is irritable and acting abnormally from the want of its accustomed stimulants and sedatives, you cut short this disorder of the brain, and even if that organ become diseased with repeated attacks, by renewing the stimulants with the addition of opium; and on the same principle you will act wisely if you add tobacco, supposing the brain has been habitually under the influence of that powerful narcotic poison. Where your patient has been "chawing," this can be easily managed, even in a hospital; not so with the smoking, though in extreme cases it of course might be allowed.

These are the cases in which you are justified in using tobacco as a medicine just as much as opium; but it is no argument in favour of the use either of opium or tobacco, except as drugs.

Let us now return to our notes of the case:—

June 11th.—On his admission, he was put to bed, and a flannel-roller applied. During the day he remained quiet, dozing, breathing with evident difficulty, and, when questioned, complaining of pain in the wounds on his head. I saw him about one P. M., and ordered a rhubarb and calomel powder, one scruple. In the evening, some slight emphysema was observed about the neck.

12th.—He passed a restless night, and at times kept muttering about his work and domestic matters. By the morning the emphysema had increased, and by the middle of the day had extended very considerably, swelling up the arms and shoulders, and neck and face. There was also an appearance of congestion about the face. His dyspnœa was frightful; and he seemed almost in a dying state from difficulty of breathing. I saw him again about half-past one P. M., and opened a vein in both arms, but only a very small quantity of blood could be obtained. He was at

this time sufficiently sensible to respond to directions regarding position, &c.

I must here remark on the question of performing venesection in such cases. Some little time ago there was no difference of opinion, every surgeon believing in the necessity of bloodletting. But in the present day you will find some who consider it quite unnecessary. My own opinion is, that as a general rule in these cases, as in almost every other, bloodletting from the arm is not required; that in most cases where you think it necessary to abstract blood at all, it is better done locally by leeches. During the last fifteen years I have not opened a vein in the arm half a dozen times. Twice previous to this case I did it to relieve dyspnœa from penetrating fracture of the ribs—cases in which the ribs had been driven inwards by the shaft of a gig, and some similar piece of blunt wood. In both these cases I believe the bloodletting saved the life of my patients, for the relief was so immediate and complete. In this case the blood would not flow, but the life of my patient has been preserved. This result as regards the preservation of his life from the effect of the wound of the lungs, and the consequent inflammation, I attribute to the action of the mercury; but I believe that the long continued pain in his side, and shortness of breath, would have been less if the blood had been taken as I wished it at first. Powdered rhubarb and calomel, one scruple, repeated. The breathing remained very difficult, and the patient complained that the pain in his side was very severe. In the evening a cold lotion was applied to the head. During the night he had low muttering delirium.

13th.—Much the same; the emphysema has increased slightly. The bowels not having acted since his admission, he was ordered croton oil, one minim immediately, and two grains of calomel and a quarter of a grain of opium, four hours after the operation of the croton oil. During the day he continued in a dozing state, occasionally muttering about his work, &c. The difficulty of breathing and emphysema were not diminished.

14th.—He passed rather a better night, but wandered in his mind at intervals. In the morning Mr. Solly ordered croton oil, one minim, and castor oil one ounce, the bowels not having acted up to this time; nor did they until the evening, when a turpentine enema was employed, after which he was ordered tincture of opium, ten minims; aromatic spirit of ammonia, half a drachm, and compound infusion of senna, one ounce, every six hours.

15th.—During the night the bowels were acted on two or three times; he passed a much quieter night than he has hitherto done; in the morning he had a slight cough.

16th.—He passed a tolerable night, and expressed himself feeling better, the emphysema having diminished slightly, and the breathing easier; the cough is rather troublesome. He occasionally dozes, and then mutters in a rambling manner, but answers questions rationally when roused.

17th.—The emphysema is still diminishing, the cough less frequent, the breathing much freer, and he is feeling better. The gums and mouth being sore, chlorinated soda gargle was ordered.

18th.—The emphysema is gradually disappearing, though it still remains to a considerable extent; the pain in the side continues severe; his sleep is better; the bowels regular. His mental condition is somewhat peculiar; he takes strange fancies into his head, and rambles unconnectedly on various topics; his language is often coarse, and frequently impudent. It appeared to me clear that this state of mind was probably dependent on the want of his usual stimulus, and I ordered him a pint of porter daily in addition to full diet.

21st.—His general health is certainly improving, as also the local symptoms, the cough alone continuing troublesome; his manner, however, continues very strange; he frequently will rise in his bed, look about him in a suspicious manner, and is impudent and often abusive in his language; though evidently suffering from a species of delirium, his rambling, both in language and action, is by no means meaningless. His answers to questions, though often ludicrous from their peculiarity, are more or less pertinent; he seems rather to glory in his insolence. He considers himself a very ill-used man, alleges that he gets no food or drink, and is very impertinent to the attendants. He accompanies nearly every sentence with an oath.

23rd.—The emphysema has now disappeared.

26th.—Since the last date this peculiar delirium has been increasing; he declines to take his medicines excepting when and as he pleases, and often refuses it altogether; he frequently expresses his determination to leave the hospital. I now ordered him port wine, six ounces. Towards evening he became exceedingly noisy and troublesome: about ten o'clock he persisted in getting out of bed and walking about the ward, and at last became so ungovernable that a strait-waistcoat was put on, and he was strapped to his bed.

In a case like this, you must not be discouraged in the use of stimulants because you find, as in this instance, that their first effect is apparently to increase the excitement. The object of the stimulants is to improve the condition of the blood through the organs of digestion, and until this is effected, and their secondary or sedative action, in combination with the opiates, brought into play, your patient shows no sign of improvement. But, supposing of course that you are right in your diagnosis—and upon this, I need scarcely say, depends all your success—you may even increase the amount of porter, wine, opium, &c., and in a short time your patient will begin to improve, as you will see from the result in this case, if we continue our details.

27th.—He is much quieter to-day, so that, on the removal of the straps, he did not attempt to leave his bed; in other respects much the same.

28th.—He continues quiet, but still talks in the same strange manner, and refuses his medicine.

He was ordered an additional pint of porter, and half a drachm of the solution of hydrochloride of morphia in camphor mixture, immediately, and repeated every four hours if necessary.

30th.—Since taking the morphia he sleeps a good deal during the day.

July 1st.—He was ordered six ounces of rum.

3rd.—He is evidently improving, but still takes some peculiar fancies into his head, and talks somewhat strangely, though in a much milder strain than previously.

13th.—He was directed to chew his accustomed quantity of tobacco, which of course he had not done since his admission into the hospital.

17th.—As he was complaining of a good deal of pain on the lateral aspect of the left side, a blister was applied there. He is now quite quiet, and all but quite rational in his general conversation.

18th.—The pain in his side is much relieved by the blister.

20th.—He is now quite rational, and the pain in his side is much less in degree and extent.

Aug. 1st.—At the present time he is taking no medicine. He is on full diet; porter, two pints; port-wine, six ounces; rum, six ounces. During ordinary respiration, and when walking quietly, he has no local pain; but if he takes a deep inspiration, or should he by chance stumble in his walk, he feels a sharp momentary pain at a point a little anterior to the angle of the ninth rib. (Previous to the application of the first blister, he experienced a more diffused pain under the same circumstances over the greater part of the left side, more especially on the posterior aspect, but it became much relieved after the blister, and has been again lessened by the application of the second on the 27th.) He had a poultice applied to the blistered surface; there is some pain on pressure over the part indicated independent of that arising from the soreness of the blistered surface. The lower and lateral part of the chest is dull, though breath-sounds are heard when he takes a deep inspiration; a distinct friction sound is also perceptible. At times he feels a little giddiness when walking, so as to oblige him to lay hold of a pillar or some other support; he also complains of a little dimness of sight, obliging him to hold his book when reading, or paper when writing, almost at arm's length, characters not appearing clear when closer. His head is quite free from pain, his appetite is very good, tongue clean, bowels regular, sleep sometimes disturbed owing to an abrupt motion occasioning pain in his side. He feels that he is daily gaining strength. He is now quite rational in his conversation and behaviour, and seems an intelligent, well-disposed man; his conduct in the ward towards the sister, nurses, and patients, is in every respect marked by propriety.

The contrast between his present conduct and that when suffering from this obscure and imperfectly marked form of delirium tremens is quite astonishing. No two men could be more dissimilar. Well might Shakespeare say, "Oh, that men should

put a thief into their mouths to steal away their brains!" It is, indeed, a disgusting sight to see a man disguised by liquor; but it is much more frightful to view the lasting consequence of intemperate habits in such a case as this, where the effect does not cease with the cessation of the habit, but returns again as an avenging angel to punish him for past transgressions.

Let me, finally, impress upon you the necessity of combining the study of medicine with surgery if you wish to treat even what are called pure surgical diseases with any chance of success. Supposing, for instance, in the treatment of such a case as the above you had seen merely the local injuries of the chest and head, and looked to them alone to explain all the symptoms. In all probability you would have hurried your patient into an untimely grave. The delirium you would have attributed to an injury of the brain, the effect of his blow upon the head, and have treated it, *secundum artem*, by leeches to the head and other antiphlogistic measures. The first blood-letting not knocking down the delirium, another would, as I have seen formerly perpetrated, have followed as a matter of course; and if by the repetition of such heroic measures you had the opportunity of observing the pathological condition of the brain in the dead-house, serous effusion was found as the consummation. The anxious surgeon would point in triumph to his surrounding pupils to the proof that the disease was inflammatory, and that he died in spite of all his judicious treatment, and not, as we should now believe, in consequence of it.

ON ECTROPION.

By J. C. WORDSWORTH, Esq., M.R.C.S. Eng.,

ASSISTANT-SURGEON TO THE LONDON HOSPITAL, AND TO THE
ROYAL LONDON OPHTHALMIC HOSPITAL.

THE deformity resulting from ectropion or eversion of an eyelid, combined with the consequent injury to the visual apparatus, has drawn so largely on the inventive resources of the surgeon, that few conditions of disease have had a greater number of palliative or absolute remedies devised for their relief. Hence we may conclude that this condition comprises so many phases of degree as to require a corresponding multiplicity of proceedings, or it is one so susceptible of remedy, that much ingenious invention has been wasted on it. Few who have had opportunities of treating this multiform defect will embrace the latter position, or deny that it is one which requires all the ingenuity and discrimination which the surgeon can bring to bear on it, or affirm that yet science affords an apposite remedy for every case. Again, the deformity which marks the well-aimed efforts of the surgeon in its alleviation is sometimes so great, that though the ophthalmia consequent on the constant exposure of the eyeball has been removed, the case is robbed of half its success by an unseemly and irremediable scar, almost as

deplorable to some patients as the original disease.

To the scientific surgeon, impressed by the gratifying progress of modern conservative art, few impedimenta of his skill exist more regretted than these vestiges of his handiwork. Science has now divested the knife of half its terrors; let us hope that we shall daily learn to dispense with that last appeal, and also to diminish its opprobria. How gratifying has been the result of treatment in remedying congenital and other deformities by subcutaneous section! How complete the triumph of art in restoring the consensual movements of the eyeball, in strabismic deformity, by subconjunctival tenotomy!—so complete indeed that strict scrutiny fails to detect a flaw, and the most obdurate of medical Tories cannot withhold their attestations of progress. These are the fruits of seeds but lately laid down. How rapid and prolific the fructification! What rewards for the past!—what prospects for the future! Within the last three years, three severe cases of ectropion, following exfoliation of the edge of the orbit, have come under my own observation. In all three the upper lid has been contracted, and adherent to the bony circumference of the orbit. In all the same general plan of treatment has been adopted, with slight variations for individual peculiarities.

The first case was that of a poor young German tailor, who applied at the Ophthalmic Hospital in 1854. He was suffering from ectropion of the right superior lid, following necrosis. The lid was firmly attached by its integument to the orbital arch, so completely everted that its ciliary margin had taken the place of its orbital attachment, and the deformity was greatly increased by a large fleshy mass on its mucous surface. The cornea had suffered considerably, as he had long been unable to protect it by the lid, and the irritation affected his other eye so much, that he could not follow his usual occupation. As our beds at the Ophthalmic Hospital were in such great request that I could not secure his admission, I transferred him to the London, where, aided by the advice and assistance of my colleagues, I performed the following operation:—The patient being under the influence of chloroform, the mass occupying the ocular surface of the lid was dissected away; then, as the lid was so much diminished in all its measurements, a free incision through the skin was made, extending the whole length of its attachment to the orbit, so as completely to sever the cartilage from the bone, and enable it to be once more placed in its normal position. The supercilium was then freely raised from the pericranium, by inserting the scalpel, so as to allow of its being transposed to some distance by slight pressure. The original orbital margin of the tarsus was then fixed by several small sutures, so as to retain the lid in position, and by means of plaster and compresses the supercilium was drawn down, with the intention of its forming new adhesions in its transposed position. The sutures were quickly removed, and

the wound healed by adhesion. When the œdema subsided, I was gratified to find that the width of the lid was sufficient to protect the cornea, which soon recovered its transparency to such an extent as to enable the man to resume his employment. The remaining deformity was slight, (no scar being visible), and only caused by the uneven free edge of the tarsus fringed by an imperfect row of cilia.

I had an opportunity of seeing the patient for some months after the operation, during which he had not suffered any further inconvenience; and being satisfied that he was cured, he called on me to say he was about to leave for America.

The second case was that of a little boy of extremely delicate appearance and strumous disposition. He was for a considerable period under my observation as an out-patient at the London Hospital, on account of exfoliation of the circumference of the right orbit, invading the superior and outer parts, particularly. Under the influence of iodine, iron, and cod-liver oil, with strict attention to nutrition, he gradually improved in health, the small pieces of bone separated, and the disease subsided. He had been occasionally liable to attacks of ophthalmia, which implicated the corneal conjunctiva, and evinced the usual obstinacy of strumous complication, leaving considerable opacity of the cornea. During the progress of the case, contraction of the implicated skin ensued, the upper lid became thickened, its breadth gradually diminished, till the free margin occupied the sight of its normal attachment to the orbit, being at the same time completely everted. Constant ophthalmia had latterly existed, producing considerable opacity, and consequent impairment of vision. As the cornea was then always more or less exposed, it was evident that unless some means of liberating the lid were effected, the eye would eventually be lost. I therefore performed the following operation, the patient being under the influence of chloroform.

An incision was made along the whole length of the attachment of the lid, at a few lines from its ciliary edge, so as to allow of its integument being freely liberated. By this means a fair width of eyelid was procured, though the narrowing of the tarsal cartilage was considerable. I considered that I had sufficient cover for the globe, provided I could preserve it. To effect this, I raised the integument of the brow from its deeper attachment, by inserting a scalpel to some distance, so as to allow of its being transposed to the extent of half an inch. This was secured by compresses and strapping, as in the last case. New adhesions occurred, and on removing the applications, the patient was enabled to raise the lid and to close the eye. Rapid improvement took place, though not to the extent of the previous case on account of his morbid tendency. Scarcely any deformity resulted, beyond that of an imperfect fringe of irregular and distorted cilia. Soon after the operation I left for the East, and my observation of the case consequently ceased; but my friend, Mr. Gowland, who had charge of him

in my absence, informs me that he considered the case most successful.

The last case was that of a poor Smyrna Jew, who had had exfoliation of the upper margin of the orbit; and as he had not had the advantage of medical advice, the progress of the case had been very protracted. The deformity was very great, and the surrounding tissues much indurated and scarred. He was decidedly strumous, and constantly suffering from ophthalmia, by which the transparency of the cornea had been greatly destroyed, so that scarcely any vision remained. With the assistance of my colleague, Mr. Holt-house, I repeated nearly the same operation as the last, the patient being under the influence of chloroform.

The difficulty of obtaining sufficient covering, in this case, was much greater, as the cartilage had dwindled into a mere ring, and the indurated skin was less manageable; still, I believe, the improvement quite equalled that which could have been obtained by any other means, as far as I could judge, and the improvement of the condition of the cornea continued, while under my care; but as I left for the Crimea within a few weeks after the operation, I am not able to give any further account of him.

The above cases no doubt might have been more or less relieved by the usual operations; but I believe the lid was more effectually liberated by the course pursued than could easily have been accomplished by other means; and as the cartilage must be the basis of the borrowed tissue, the more that important structure could be replaced the greater the resulting success. In all, the scars of incisions were avoided, and the minimum of injury to the tissues (compatible with success) inflicted. It is obvious that the plan is only applicable to those cases in which the tarsus remains, the deformity being due to the condition of the integument. If it possess any merit over other proceedings in similar cases, it is ascribable to its freedom from the resulting deformity of vertical incisions, or the scars consequent on transplanting integument.

Finsbury-square, 1857.

ON A CASE OF ASCARIS LUMBRICOIDES IN THE LARGE INTESTINE, IN A CHILD TEN YEARS OLD, AND NOW FIRST SUDDENLY PRODUCING ALARMING SYMPTOMS, SIMULATING THE EFFECTS OF AN IRRITANT POISON.

By EDMUND ARCHER, Esq., M.R.C.S., WARR,

LATE SURGEON TO THE FARRINGTON GENERAL DISPENSARY, LONDON.

In the beginning of February last I attended a pauper child, aged ten years, the son of a labouring man, for slight tonsillitis, which in a few days yielded to a nitrate of potash gargle. This was the only time for some years that this child had been under medical care until the early part of last month, when my brother was requested to

see him. The tonsils were again inflamed; recovery, however, proceeded favourably under the internal use of the disulphate of quina and dilute sulphuric acid; and during convalescence—the boy being rather pale and weakly, seemingly from the abstinence enforced by the quinsy—some wine was ordered daily. Under this treatment the case, which had not at any time presented serious features, continued to mend.

On Monday, July 13th, I saw the patient, and examined his throat. The tonsils were now very little if any larger than natural, and the only trace of the past malady consisted in a few of the yellowish-white spots on the surface of the glands, so commonly seen as a consequence of bygone cynanche. I considered, from his general condition, that after another bottle of the quinine, with a continuance of the wine, the boy would not require further treatment.

On Wednesday, the 15th, my brother saw the child, and told me I need not call again. The following evening, however, a messenger arrived in great haste, declaring that the boy was dying. I went at once to see him. He was lying on his side in bed, with warm perspiring skin (the weather was sultry at the time); expression devoid of anxiety; mind clear; pulse 80, small and soft; respiration natural; no cough; tongue moist, rather pale, but perfectly clean. No vomiting, no diarrhoea. Abdomen rather less full than natural, but soft and quite tolerant throughout. The boy did not complain of or acknowledge any pain; there was no enlargement or tenderness about the tonsils: in fact, I fancied that I had been unnecessarily favoured with a walk of some three miles. It was most difficult to obtain replies from the friends. I asked the mother what she had observed amiss with the child. She said she did not know, but supposed he must have fainted; which supposition (seeing the attack was said to have come on when the child suddenly assumed the upright posture, and considering also the extreme heat of the weather) I thought not impossible. As I was leaving, the patient's elder sister asked whether she should come for medicine? to which I replied, "No. The child is weak, but is not labouring under any disease, that I can discover, which medicine is likely to remove." On the following day the child was once more seen by my brother, who concurred with me in the belief that there was not any disease, and thought further visits unnecessary.

Thus matters rested for four or five days, when on the evening of the 21st a man brought word that the child was either dying or insensible, and assuring me that himself had *seen* the child, and that he was really very ill, I again visited him. He was lying down, quite sensible; but the circulation was feeble in the extreme, the pulse being perceptible only at one wrist; the tongue was still moist and perfectly clean. I observed to the mother that the child was sensible, and as I was wondering within myself what the alarming condition of the circulation might mean, a change came over the features of the poor boy, which I

shall not readily forget, but which those who have stood by the bed-side of an unhappy sufferer from tetanus will at once fully realize. The skin was bathed in a profuse sweat; every muscle of the face stood out in bold relief; the eyes were fixed and staring; whilst the features altogether portrayed the greatest anguish and alarm. A thought crossed me that the lad might accidentally have run a needle in the foot, and be now suddenly seized with tetanus. I was about to place my hand gently upon the epigastrium for confirmatory evidence, when the child shrank from my touch as though I had endeavoured to stab him, but he could not speak. I found, moreover, that the lower limbs were bent *forwards*, and there was no true spasm, since the muscular action, though extreme in intensity, was evidently not involuntary. Vomiting at this time commenced and continued while I was there, and the mother now showed me two vessels containing the substance vomited previous to my arrival, comprising, amongst other matters, a dark brown, turbid fluid of some consistence, with masses of tenacious mucus intimately mixed with blood, and a fine white powdery substance; these masses sank to the bottom of the vessel, and were sufficiently firm to allow of their being removed by a piece of stick. I was assured on inquiry that the boy had been in his usual health until dinner-time, at or shortly after which vomiting began, attended with pain at the epigastrium, both which had continued ever since with scarcely an intermission.

Now, seeing the boy's *perilous depression; the pain and tenderness at the epigastrium; the incessant vomiting of a substance which, from its appearance and general character, evidently came from the stomach*; even had I not by previous examination fully ascertained that the condition of the throat forbade the suspicion of its origin from that quarter;—taking, I say, all the symptoms together, and learning that the boy had been in his usual health up to dinner-time, when he was suddenly seized with the pain, depression, and vomiting of a fluid which quickly showed abundantly evident marks of blood, as well as other fluid of suspicious character; and knowing as I did that the poor boy had been—so far as his symptoms enabled us to judge—free from disease so shortly before; seeing that even now, when death was imminent from the severity of the symptoms, the tongue was perfectly clean, I could not avoid fearing that, either from accident or design, he had taken something which had acted as a poison. And inasmuch as there was no abrasion of the inner side of the lips or mouth, no sore-throat, no diarrhoea, and (as I now learned from the father) the symptoms began soon *after* and not *at* dinner-time, I thought that if poison had been taken it was more probably an irritant than a corrosive, perhaps arsenic. I therefore removed in a carefully washed bottle part of the contents of the stomach, and rode direct home. I hastily prepared and applied the colour tests, without discovering any definite trace of poison. I also tried Reinsch's reduction process, and obtained a well-

marked dark violet stain, the careful further examination of which to prove conclusively its exact character would have occupied more time than I thought the present condition of the patient warranted me in bestowing, especially as by this time the messenger who followed me had arrived from the patient's house. I explained to my brother the nature of the case, reminding him that the stain might or might not prove to be arsenic, and asked his advice and assistance. Upon seeing the patient and the character of the matters vomited, he agreed with me upon the propriety of immediately using the stomach-pump, which was done, the viscous being carefully washed out with three or four pints of warm water until the fluid returned clear, a little sulphate of zinc being added at the commencement. The child was left comfortably dozing at about ten P.M. The hydrated sesquioxide of iron was prepared extemporaneously, and ordered to be given every half hour.

Next morning a messenger arrived, saying that the vomiting and pain had returned as severely as ever, and I was at some pains to have the lad removed to the infirmary. He lingered through this and the following day, and died on the morning of Friday, the 24th July.

Examination of the body discovered a round worm, ten or eleven inches long, in the large intestine, the existence of which during life had never been avowedly suspected, although the boy was seen by several medical men, and although I myself attended other members of the same family, well knowing them to suffer from lumbrici, a disease most common in this neighbourhood, especially amongst the children of the poor, and resulting apparently from their using, for domestic purposes, impure water.

With the above to me most evident symptoms of poisoning, I am constrained to believe that the course pursued was not only justifiable, but imperatively demanded, and that any other mode of treatment would have rendered me justly obnoxious to severe criticism and censure. This boy had never until now suffered from symptoms of disease of the abdomen; he was never suspected to be the subject of worms. Medical men are, I apprehend, alone responsible for using to the best of their judgment the evidences presented in each individual case; nor should I be prepared to infer the existence of serious disease in a child habitually helping his father at the plough. The boy's condition shortly before the fatal seizure—he clean tongue, perspiring skin, quiet pulse of 60 per minute, and, above all, the abdomen less full than natural, and bearing very firm pressure in every part without eliciting complaint of pain or uneasiness—seemed to me to declare conclusively the absence of idiopathic inflammation of the stomach, a thing almost unheard of, or of any other abdominal viscus. I may mention that hernia was looked for while the child was vomiting, but none existed.

Watton Cottage, near Ware, Herts, August, 1857.

* * We have been informed, that Mr. Archer has been subjected to some annoyance respecting this

case, and that the course he had pursued gave rise, in the minds of the ignorant and unkindly disposed, to suspicions of improper practice on his part, too ridiculous to be dwelt upon. The facts of the case speak for themselves, and are a sufficient justification of the rectitude of intentions of the surgeon, and the perfect propriety of his mode of treatment.—SUB-ED. L.

THE EPIDEMIC.

By J. PIDDUCK, M.D.

THE successful practice of physic depends upon sound pathology, which is deduced not only from morbid anatomy, but also from the causes and symptoms of disease.

The cause of the prevailing epidemic is doubtless atmospheric, though probably telluric in its origin, the emanations being influenced and rendered poisonous by electric agency. Upon this point all are agreed.

The symptoms, the most important part of the pathology, as coming more immediately under the cognizance of our senses and observation, are distinctly those which result from the action of a morbid poison. The first or premonitory is epigastric irritation—a dull, depressing pain, with a sense of fullness and soreness, in the stomach and bowels. This is followed by nausea, vomiting and purging, or *bilious diarrhoea*. If this evacuation of bile by a natural effort be restrained, by stimulants, sedatives, or astringents, bile ceases to be poured out, and the natural efforts continuing, only serous evacuations are passed, constituting the *serous diarrhoea*.

To assert that diarrhoea and cholera are only well-marked stages of the same disease is not quite correct; it is the presence or absence of bile in the evacuations which constitutes the essential difference between them. So long as bile continues to be present in the stools, the case is one of simple diarrhoea, and if uncomplicated, unattended with danger; but when diarrhoea ceases to be *bilious* and becomes *serous*, the case is eminently dangerous.

What is the condition of the alimentary canal which occasions this marked difference? The answer is supplied by the morbid anatomy of the disease. In the inspection of fatal cases, two most important facts are revealed: a congested state of the mucous membrane of the stomach and duodenum, and a distended state of the gall bladder. That these two states stand in the relation of cause and effect, there cannot exist a rational doubt. The congested condition of the mucous membrane lining the duodenum closes the orifice of the bile duct, and prevents the flow of bile.

If this pathological statement of the epidemic be correct, the methods of treating the disease in its invasion by astringents, by stimulants, and by sedatives, on the one hand, and by large and repeated doses of calomel or castor oil—not to mention croton oil and violent drastic purgatives,

which is now pretty nearly exploded—on the other, must be equally unphilosophical and dangerous. One danger arises from converting a bilious into a serous diarrhoea; another, from converting a case of diarrhoea into one of bilious typhoid fever. That the same poison which is the cause of diarrhoea, is also the cause of bilious typhoid fever, is evident from the fact that cases of both are always rife at the same time, and that the one is convertible into the other, by a sudden arrest of the diarrhoea, by which the poison is allowed to enter the blood.

Treatment.—The indications of cure in aid of the natural efforts are, first to dilute, and then to expel the poison. The best diluent is that prescribed by Sydenham—thin meat broth, drank copiously in bed. The safest aperient, and that which has answered in a multitude of cases, is half a grain of calomel and three grains of rhubarb, in a pill, taken immediately after the broth, and followed in three hours by three drachms of castor oil.

In the premonitory stage, this method of cure prevents the access of diarrhoea, by at once expelling the poison; and if diarrhoea have already supervened, it serves to carry off the poison and also the bile, which is poured out profusely for its expulsion.

But if the bilious diarrhoea should have been arrested, and should not recur, the case assumes one of two forms equally dangerous—serous diarrhoea or typhoid fever.

In cases of serous diarrhoea, the indications of cure are, to remove the congested state of the mucous membrane lining the stomach and duodenum, and to restore the evacuation of bile. To remove the congested state of the mucous membrane, cooling salines, cold drinks, and cold applications to the epigastrium, with warmth to the biliary extremities. To restore the evacuation, the calomel-and-rhubarb pill answers better than more active aperients.

In the treatment of the typhoid fever, since the disease, when once fully formed, runs a definite course, the object is to conduct the patient through its several stages in safety, by meeting dangerous symptoms as they arise, taking care not to arrest the attendant diarrhoea, only to restrain its excess.

This brief statement is the result of a careful observance of every return of the epidemic from its first appearance in 1831–2 to the present time, a period of twenty-five years, during which I have had extensive opportunities, in private and dispensary practice, of testing the truth of the pathology and the success of the practice. The motto to guide us in the treatment of this and every other epidemic is, *obsta principiis*. If the golden opportunity be lost, or the case be mismanaged at the outset, it quickly assumes a formidable aspect, and becomes extremely difficult of cure.

Montague-street, Bloomsbury, Aug. 1857.

ON A CASE OF DISLOCATION OF THE OS NAVICULARE AND OS CUNEIFORME INTERNUM.

By EDWARD F. LONSDALE, Esq. F.R.C.S.,
SURGEON TO THE ROYAL ORTHOPAEDIC HOSPITAL.

THE following case possesses sufficient interest for publication, owing to the extreme rareness of the kind of accident, and from the symptoms being so well marked as to leave little doubt as to the nature of the injury:—

Mr. T—, aged twenty, was riding a pony, in July 1856, at a quick trot, without a saddle, but merely a horse-cloth and girth; when, turning a corner “sharp,” the pony fell “all fours” on its side, the rider’s leg being between the animal’s belly and a slight slope formed by some stones, his foot being at the same time forcibly pressed against by the buckle of the girth. He got up, and felt great pain and lameness, but was able to mount the pony again. When he reached home the foot was greatly swollen, the swelling being principally confined to the instep, but with very little ecchymosis. Leeches were freely applied, and cold lotions, and he remained in bed for a week. When he consulted me, which was some months after the accident, the foot presented the following appearance:—The arch was completely destroyed, and the whole foot everted, very much resembling the deformity called valgus, or flat foot. There was also a projection of the os naviculare and os cuneiforme internum inwards (by which I mean towards the opposite foot), and upwards also, forming a projection towards the dorsum of the foot, and not downwards, as in valgus.

On close examination, it was evident that the two bones were displaced; for a depression could be felt between the lower end of the tibia and the projecting navicular bone, when the finger was pressed forcibly downwards in this situation; whilst on the other side of the projection, the metatarsal bone of the great toe could be traced throughout its whole course, and its junction with the internal cuneiform bone could be felt, but its base was found to be much below the level of this latter bone.

Another symptom of the bones being dislocated was, that the foot was shorter than natural, which was found upon measurement from the lower end of the tibia, at the bend of the ankle-joint, to the great toe, the distance being shorter than the same points on the opposite foot. This was to be explained by the displacement of the scaphoid and cuneiform bones, allowing the astragalus to fall more forward, and of course taking the tibia with it, thus diminishing the distances between the bend of the ankle and the great toe. From the same cause, the distance from the lower end of the tibia to the extremity of the os calcis backwards was increased in length—which was also ascertained on measurement with the opposite foot.

The above points, together with the absence of

all probability, from the nature of the accident, of there being fracture of these small bones, were quite sufficient to make me decide that the scaphoid and internal cuneiform bones were displaced upwards and inwards. The treatment I adopted was that employed in severe cases of valgus, not with the hope of getting the bones into their natural position again, but to give support to the arch of the foot and the ankle-joint. For this purpose, I ordered a strong boot, with a vulcanized indiarubber pad placed within it, to support the arch of the foot underneath the point where the bones were displaced. The boot also had an iron attached to it, passing upwards outside the leg to the knee; round this, opposite to the ankle-joint, a broad strap passed, made to embrace the lower end of the tibia, and so prevent the ankle falling inwards, which it was inclined to do, owing to the eversion of the foot. The patient continued this treatment for six months, the foot gradually regaining strength, and he was enabled to walk longer distances with but little inconvenience. He now only wears the pad, and this will be prudent for him always to do, to guard against weakness of the arch of the foot.

The extreme rarity of this kind of injury is shown by no mention being made of it by any authors who have written on dislocations. Cases of dislocation of the astragalus, scaphoid, and cuneiform bones *separately* have been described, but none of dislocation of the scaphoid and internal cuneiform *together*.

Montague-street, Russell-square, 1857.

A NEW CAUSTIC FOR CANCER, &c.

By WEEDEN COOKE, M.R.C.S.,

SURGEON TO THE ROYAL FREE HOSPITAL AND TO THE CANCER HOSPITAL.

MAY I be permitted to revive in the columns of THE LANCET the subject of the treatment of cancer by caustics. I do not propose to consider the past history of this particular mode of treatment, overlaid as it is with melancholy instances of unfounded pretension and fatuous credulity, but to ask, first, whether any and what good is effected by this agent, or these agents! and, secondly, which or what form of caustic avails most to the end in view?

In the first place, I would entirely abjure the use of caustics in all cases in which the knife can be employed, for the very simple reasons that the latter instrument is humane, expeditious, safe, and, under chloroform, painless; whilst the former is barbarous, tedious, unsafe, and, as anaesthesia cannot be kept up for four or six weeks, painful in the extreme.

I, then, narrow the use of caustics to those cases of cancer in which there is an open ulcer, having attachments to bone or to vital parts, and in these cases undoubtedly good may be done by destroying the superficial cancerous mass, and establishing a healthy granulating surface, which

in many instances cicatrizes, provided the patient be supported during the treatment with all that is nourishing and comforting.

Granting, then, this limited use of caustics, it becomes necessary to consider what agent is the least objectionable.

I have experienced two cases, and have heard of others where chloride of zinc was employed, in each of which a severe and dangerous attack of pleuro-pneumonia followed the application, and I cannot but believe was consequent upon it. This and the pain it produces, urged me to seek for some agent more free from objection. The sulphate of zinc gives great pain; the potassa fusa destroys the mass rapidly, but it grows again after this application. I tried the anhydrous sulphates of copper and iron, and very useful caustics they proved, giving less pain than others, but being at the same time too mild in their action for the destruction of large growths. Eventually the powerfully destructive nature of manganic acid was suggested to me, and Mr. Bastick undertook to combine it with a base—viz, potassa. In this combination I believe, from what I have seen of its effects, we have a most invaluable agent. This caustic contains a very large quantity of oxygen, and would seem to act by imparting this to the tissues, thus producing a chemical combustion. The pain produced is much less than that of any other caustic, and in some instances after the first minute or two there is no pain at all, and I have observed no ill consequences. This “manganese cum potassa” caustic is a dark green powder, and may be applied very readily by means of a small pepper-castor. A thin coating of it will remove instantly all unpleasant odour from the ulcer, and when used for reducing the exuberant growth, must be applied in a layer as thick as the tissue to be destroyed. By dropping a few drops of water upon the powder after it is applied, it will form a paste, and adhere to the part, after which some simple dressing may be applied. By means of carrot poultices the eschar drops off in three or four days. If necessary, the manganese is reapplied in the same easy way until the diseased mass is all destroyed, and the subjacent healthy tissues granulate and cicatrize by means of a slightly stimulating lotion of chlorate of potash. Velpeau has a high opinion of the sulphuric acid, but could not succeed in making a paste with it to limit its action. This new combination of manganic acid and potassa will, I hope, attract his attention, and supply him, as well as my own countrymen, with an efficacious caustic, convenient for application, less painful than all others, and free from injurious effects upon the constitution. The well-known antiseptic effects of manganic acid suggests its use in all foul and phagedænic ulcers, and I have no doubt that large crops of warts may be conveniently removed by its agency.

Upper Berkeley-street, August, 1857.

ON UNNECESSARY ORTHOPÆDIC OPERATIONS.

BY W. J. LITTLE, M.D.,

FOUNDER OF THE ROYAL ORTHOPÆDIC HOSPITAL, ETC.

(Concluded from October No. p. 802.)

On the Treatment of Imperfectly Cured, Relapsed, or Neglected Cases of Talipes Varus.

THIS subject is one of much importance to the credit of orthopædy, and especially of tenotomy, for the cases are numerous in which the fruits of this operation have been lost from different causes.*

As a striking instance of the liability of congenital talipes varus to recur, I may relate one which has recently passed from my hands. I operated on the subject of it, a male infant brought from Australia, seventeen years ago. The tendons divided were the Achilles, the anterior tibial, and the posterior tibial. The last of these was divided not subcutaneously, but by exposure of it. At two and a half years of age the child was returned to Australia "cured," with the usual directions to the friends and medical adviser as to perseverance in rubbing, working of feet, exercises in drilling as soon as capable of them, and right use of retentive apparatus. At six years of age he reappeared here, the foot entirely relapsed as regards the contraction, and aggravated as regards the form and relations of the bones and ligaments, caused by walking on the deformed member. I repeated the former division of tendons, this time all subcutaneously, the posterior tibial below the site of former operation, and severed likewise the plantar fascia. At eight years of age he again returned to Australia, walking perfectly well, only the foot was more atrophied than at his first dismissal from treatment. As if to illustrate the difficulty of parental and even professional management of such a case, at that period at the antipodes, he again visited me at the age of thirteen, the foot again quite distorted, evidently threatening to be regarded as an inveterate deformity. This time I was not inclined to waste the credit of tenotomy. I had, moreover, ascertained by experience how much may be done with a relapsed case without operation, and was desirous of convincing the friends that the relapse was due to neglect of the cautions I had given, and not to any deficiency in

the method of treatment which had been adopted. I advised instrumental, manipulative, and physiological treatment, which was conducted under my directions, the boy being placed at school in the country, and not laid up or confined to the house a single day. The improvement was rapid; the patient has become an unusually tall man and a good cricketer; the gait, when he is not fatigued, is perfect; the only traces of the deformity consist of the ordinary want of beauty in the once varus foot, the elevated situation of the calf, and deficiency of muscular development.

The ordinary causes of similar relapses are—incompleteness of first "cure," through insufficient number of tendons having been divided, or insufficient elongation by instrumental or other treatment of the ligaments and muscles not reached by the operation; premature discontinuance of instrumental and attendant manipulation, as well as gymnastics, or studied exercises of the member.

A formidable pathological cause of return of deformity after treatment conducted with or without operation is, that whilst the recently-elongated muscles and tendons are, through more or less protracted duration of the deformity, inferiorly organized and grow less than affected parts, the bones and muscles upon the originally uncontracted side of the member, having been but slightly, or not at all, implicated in the original cause of the distortion, grow at a greater pace; and thus the mode of progress of the act of nutrition favours a disproportion between the length of some of the muscles and between one portion of the latter and the bones. This natural pathological tendency to relapse requires to be counteracted by the similar course necessary in any disease—viz. by the medical practitioner taking care not to regard a case as "cured" so long as a trace of contraction remains, and by sedulous use of some of the means used for the cure—in this case by active and passive exercises, sometimes by instrumental and retentive appliances.

Cases of this description are continually passing from one practitioner to another. I have been consulted in many instances in which the blame has often been unjustly thrown upon the operator. I know of such cases having been temptations to unnecessary tenotomy. I have long ceased to operate them; I find that they can generally be restored by due pains in mechanical management, by thoroughly explaining to the patient or parent the circumstances which have favoured relapse, or have prevented full realization of the benefits obtainable from the subcutaneous tenotomy of Stromeyer, and by teaching them in what manner manipulations and physiological exercises of the part can best be conducted. In a few exceptional cases, in which a necessary section has been omitted, or no evidence exists of elongation of tendon by former operation, repetition of operation, or completion of it, may be necessary. I mention the fact of the late justly-celebrated Dieffenbach and Phillips having practised numerous repetitions of section of the tendo-Achillis in the same individual,

* It may not be without interest to quote in this place some of my experiences of relapse, embracing many cases, treated by myself nearly twenty years ago. Thus, although the great majority of the cases appended to my treatise on "Club-Foot and Analogous Distortions," 1860, have remained "cured," No. 2, for example, has required repetition of the operation, but is now an active cavalry officer. No. 13 has needed much attention. No. 16, in which recovery appeared perfect, as shown by the woodcut attached to that work, suffered relapse in one foot, and repetition of section of tendo-Achillis, with division of anterior and posterior tibial tendons. The subject of this case was subsequently affected with hemiplegia, one of the few instances I have witnessed of direct disease of nervous centres after congenital talipes. No. 18 partially relapsed, but recovered with the aid of manipulations and instrumental treatment, and is now a robust, active man. No. 28 subsequently occasioned much trouble, owing to the cicatrix of the slough, which had resulted from pressure against the cuboid portion of the involutioned sole. No. 28 is alluded to for the purpose of stating that, although treated without operation, the recovery has continued perfect, the subject being at present actively engaged as a student of medicine.

for the purpose of assuring my readers that this is never necessary. Such a course proves that in the earlier stage of the history of tenotomy sufficient attention was not paid by those surgeons to other modes of cure. Even in the severest adult varus, cases requiring more than a year's treatment, I do not remember ever having re-operated more than twice or thrice on the same limb, and even this I now consider excessive.

Whenever retraction of the belly of the muscle is observed, and the tendinous part disproportionately long, although this may be tense and rigid, and the movements of the articulation imperfect, the surgeon may safely determine that the maintenance of deformity is due to shortened ligamentous, muscular, tendinous, and fascial structures, situated beyond the reach of the knife, or to abnormal form of articulating surfaces.

I believe that hundreds, nay, thousands of cases, exist of incompletely cured or relapsed varus, in which the surgeon needs only to direct efficient instrumental, manipulative, and physiological treatment to enable him to realize all the good which subcutaneous tenotomy is capable of affording. I form this opinion from the circumstance that I now have brought to me for consultation a larger number of such cases than of primitive infantile varus.

In the majority of instances, it will be found that the part has only partially relapsed, the heel and the inner margin of the foot being more or less elevated, a portion of the sole being applied to the ground. In the treatment, discontinuance of the use of the limb is rarely necessary; sometimes it is required during two or three weeks, until the principal part of the elevation of the inner margin of the foot is removed. The "bringing down of the heel," as it is termed, is much facilitated by exercise upon the limb whilst it is held in an everted position by a proper instrument. In such a case, the use of an apparatus which does not absolutely confine the ankle-joint is a matter of prime importance. The apparatus already described (p. 302) becomes of singular efficacy. Its property of aiding to completely bend the rigid ankle is sometimes augmented by placing a wedge of cork or wood beneath the front of the foot, causing the patient especially to tread upon this part, and by the increase of leverage thus gained, to act more efficiently upon the resisting ligaments and muscles around the ankle and in the sole.

Brook-street, Grosvenor-square.

NOTES OF CASES OF RUPTURED PERINÆUM,

WITH REMARKS,

BY I. BAKER BROWN, Esq., F.R.C.S. (by Exam.), &c.,

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THE object of the present paper is to extend the list of cases (thirty-two in number) which I placed before the profession some two years ago.

CASE 1.—L. F.—, aged twenty; rupture of perinæum up to, but not through the sphincter; three months' duration; operation; cure.

Remarks.—Admitted into Boynton ward, under Mr. Baker Brown, on October 12th, 1855. She has had one child, with which she was in labour from Sunday until Wednesday. Prolapsus of the uterus came on about a month after, which is a source of very great pain and discomfort to her.

Oct. 13th.—Usual operation.

16th.—Deep sutures removed.

18th.—Superficial sutures removed.

21st.—Bowels moved.

Jan. 13th, 1856.—Discharged quite cured.

Remarks.—Although this case was not the severest form of rupture, still the prolapsus of the womb rendered an operation desirable.

CASE 2.—A. C.—, aged twenty-five; complete rupture through the sphincter; six weeks' duration; operation; cure.

Admitted into Boynton ward, under Mr. Baker Brown, on Nov. 6th, 1855. Was in labour with her first child forty-eight hours. When the bowels are confined she can retain her fæces for a time, but upon the slightest relaxation occurring, the fæces escape involuntarily. A good deal of prolapsus of the uterus.

Nov. 7th.—Usual operation performed.

10th.—Deep sutures removed.

12th.—Superficial sutures removed.

19th.—Bowels moved.

30th.—Discharged quite cured.

Remarks.—This case being one of a severe form, it will be observed that it was cured, and the patient discharged in less than a month.

CASE 3.—A. M. B.—, aged twenty-one; complete laceration through the sphincter; a month's duration; operation; cure.

Admitted into Boynton ward, under Mr. Baker Brown, Nov. 27th, 1855. Six months ago was delivered of her first child after a tedious labour. At first could not retain her urine, but latterly has somewhat recovered that power, but not completely. The fæces pass quite involuntarily whenever the bowels are at all relaxed. The uterus lower in the pelvis than normal.

Nov. 28th.—Usual operation performed.

30th.—Some ulceration in the track of the deep sutures, which were therefore removed.

Dec. 3rd.—Superficial sutures removed.

6th.—Bowels moved.

27th.—Discharged quite cured.

Remarks.—This case is another of severe rupture, and yet cured, and the patient discharged in a month.

CASE 4.—M. D.—, aged sixty-five; complete rupture through the sphincter; twenty years' duration; operation; failure.

Admitted into Boynton ward, under Mr. Baker Brown, on Dec. 3rd, 1855. Twenty years ago was delivered of her first child, a breech presentation. She could not retain her fæces. Eight years afterwards had her second child. Twelve months since the uterus became prolapsed, and

has much increased her sufferings. She is in the habit of taking opium to relieve her sufferings; indeed, she gets no sleep without it.

Dec. 3rd.—Usual operation performed.

8th.—Ulceration in track of deep sutures, which were therefore removed; usual dose of opium takes no effect.

9th.—A good deal of bleeding from the track of one of the sutures.

10th.—Bowels moved.

Jan. 14th.—Discharged, with more power over the rectum.

Remarks.—The patient's health was so very bad, and her constitution so impaired, that I determined not to attempt a second operation. She had a slight attack of paraplegia in the hospital after the operation.

CASE 5.—A. M.—, aged nineteen; complete laceration through the sphincter; sixteen months' duration; operation; cure.

Admitted into Boynton ward, under Mr. Baker Brown, on May 17th, 1856. She was delivered of her first child with forceps sixteen months ago. She lost the entire control over her bowels, and went to St. George's Hospital, where she remained three weeks without receiving the least benefit.

May 21st.—Usual operation performed.

24th.—Deep sutures removed.

26th.—Superficial sutures removed.

June 5th.—Bowels moved.

14th.—Discharged perfectly cured.

Remarks.—This case was also cured, and the patient discharged in less than a month.

CASE 6.—Mrs. B.—, aged forty-seven; complete laceration through the sphincter, thirty years' duration, with retracted anus, having been born without anus; operation; relieved.

Sent me by Dr. Locock. Thirty years ago was delivered of her first child. Slight control over her bowels. Bearing-down pains very bad.

March 21st.—Performed the usual operation, assisted by Dr. Jones, Messrs. G. Brown, Moullin, and Laurence.

23rd.—Removed the deep sutures.

25th.—Removed the superficial sutures.

Remarks.—There was a great tendency to ulceration, which continued for some time, and destroyed a portion of the new perinæum. Finally, everything healed, and she left town in a much more comfortable state, with control over the bowels, and the os vagina so contracted that I could only pass a very small speculum. Still the bladder prolapsed somewhat, and will require a second operation for its cure. This case was a very bad one, from the retraction of the anus, which was at least two inches higher up than normal.

CASE 7.—Mrs. D.—, aged thirty-six; complete laceration through the sphincter; operation; cure.

Mother of eleven children; at the birth of the tenth, the perinæum was ruptured, and she lost all control over the bowels. An operation was performed by Mr. Bradley, of Greenwich, in November, 1854. At the birth of her next child

the parts again gave way, and she became as bad as before.

Jan. 26th, 1856.—Although in the third month of pregnancy, I performed my usual operation, in the presence of Messrs. Bradley, Laurence, and Mr. Arthur Brown.

28th.—Removed the deep sutures.

30th.—Removed the superficial sutures.

Feb. 4th.—Bowels moved.

20th.—Quite cured.

Remarks.—It will be observed that I operated on this case although the patient was pregnant, being the third case in which I have done so successfully. I heard from Mr. Bradley in December that she had been confined of a large child; a small bit of the fourchette gave way, to which Mr. Bradley applied an interrupted suture, and all healed in three days.

CASE 8.—Mrs. B.—, aged twenty-seven; complete laceration through the sphincter; two weeks' duration; operation; partial success; second operation; cure.

In labour with her first child, and the forceps were applied to place the head of the child in the right position. After they were removed, a sudden pain expelled the child, tearing through the perinæum and sphincter. The tear extended very far back and through the septum. At the end of a fortnight I was consulted, and found nearly all the torn parts covered with new mucous membrane, so I was compelled to operate as in old standing cases.

Sept. 11th.—Usual operation, but without chloroform.

14th.—Removed the deep sutures; slight ulceration had commenced.

26th.—Bowels moved; some faecal matter escaped through a recto-vaginal opening.

29th.—External opening healed.

Oct. 17th.—The opening being still large, I again operated, being assisted by Dr. Fraser, and Messrs. Andrews and Coventry.

30th.—Bowels moved.

Remarks.—On December 1st a most careful examination convinced me that the perinæum and septum were perfect and sound, and she continuing quite well up to this time. I wish to observe on this case, that the operation ought to have been performed at once; but a distinguished professor of midwifery having been called in, recommended waiting for eight days. I cannot understand his reasons, and protest against the practice.

CASE 9.—Mrs. T.—, of Birkenhead, aged thirty-five; complete laceration through the sphincter; eight years' duration; operation; cure.

During labour with her first child, eight years ago, forceps were used for her delivery, and a recto-vaginal opening produced. During labour with her second child, the remaining portion of the perinæum gave way, and a complete laceration was produced. She lost entirely all control over her bowels.

October 9th, 1856.—I went up to Birkenhead,

and operated in the presence of, and assisted by Drs. Walker and Dixon, and Messrs. Walker and Sutiers. She was in the second month of pregnancy.

11th.—Dr. Walker removed the deep sutures; parts healed by first intention.

15th.—Removed the superficial sutures.

25th.—Bowels moved.

Remarks.—Nov. 20th: Dr. Walker reports the patient as quite well, with a very sound and perfect perinæum. This is another case where I operated, although the patient was pregnant.

CASE 10.—J. R.—, aged thirty; laceration of the perinæum extending through a portion of the sphincter; six hours' duration; operation; cure.

In labour with her first child for forty-eight hours. The forceps were applied, but before traction was made, a sudden pain expelled the child, and tore through the perinæum. This occurred at seven A. M.

Aug. 24th.—I was immediately sent for, but being out of town, my friend and assistant, Mr. Philip Harper, went, and at three P. M. performed my usual operation.

27th.—Removed the deep sutures; ulceration had commenced.

31st.—Removed the superficial sutures.

Sept. 6th.—Bowels moved.

30th.—Quite cured.

Remarks.—This case illustrates the practicability of operating immediately at the lesion. The patient was thereby saved a second confinement to bed and its attendant expense.

CASE 11.—Mrs. D.—, aged thirty; complete laceration of the sphincter of two years' duration; operation; cure.—This patient came from Baltimore, United States, to consult me. Nothing particular occurred during her first four confinements, but in the fifth the head became impacted, and forceps were applied. During the passage of the head the perinæum gave way from behind forwards. She was operated upon subsequently by Dr. Buckler, when everything promised well, until the bowels were moved, when the recently united parts gave way. She was then as bad as ever. The fæces passed involuntarily.

Nov. 20th, 1856.—I operated in the usual way, assisted by Messrs. Musgrave, Britton, G. Brown, and Philip Harper.

22nd.—Removed the deep sutures. Slight ulcerative tendency of the tracks.

23d.—Removed the superficial sutures.

Dec. 1st.—Bowels moved.

16th.—Quite well.

Remarks.—From the sphincter having been thoroughly divided at the first operation the sphincter action is not so strong as usual; but this, time will quite cure. The patient left London, five weeks after the operation, for a tour on the continent, before returning to Baltimore.

CASE 12.—Mrs. P.—, aged forty-one; laceration of perinæum, but not through the posterior fibres of the sphincter, of eight years' duration; operation; cure.—Mother of eleven children.

Labours always severe, from the size of the child. When in labour with her eighth child the perinæum gave way at the moment of passage of the head. Prolapsus of the uterus has come on, and much increased her sufferings.

Dec. 8th.—I performed my usual operation, in the presence of Messrs. Hutchinson, Britton, and Philip Harper.

10th.—Deep sutures removed. Slight marks of ulceration in their tracks.

12th.—Superficial sutures removed.

14th.—Bowels moved.

24th.—Quite cured.

Remarks.—In this patient the improvement of health generally, and the support and comfort locally, are most marked.

CASE 13.—A. M.—; complete laceration of the sphincter, of seven months' duration; operation; cure.

Admitted into Boynton ward, under Mr. Baker Brown, on Oct. 7th, 1856. Was confined of her first child (a male) on March 30th, by a midwife. On the following day she discovered that she had entirely lost control over her bowels. This has continued ever since.

Oct. 8th.—I performed my usual operation.

11th.—Deep sutures removed.

13th.—Superficial sutures removed. Catamenia appeared.

19th.—Bowels moved.

30th.—Discharged, quite cured.

Remarks.—It will be seen that this case, although one of severe rupture, was cured, and the patient discharged, in less than a month.

CASE 14.—S. C.—; laceration of perinæum, and loss of two inches of rectum, of seven months' duration; operation; relief.

Admitted into Boynton ward, under Mr. Baker Brown, on Sept. 11th, 1856. She was delivered of a large male child on Jan. 28th, by the aid of instruments. Three days afterwards she had a dose of castor oil, which acted with comparative comfort. Five days afterwards the motions were passed through the vagina. She suffered most excruciating pain. About four months before her confinement she had severe pain in the lumbar region, with frequent desire to empty the rectum, attended with great agony and a discharge of blood and pus. This continued until labour began. On examination it was found that a portion of superficial perinæum was left, and fully two inches of the rectum had sloughed away; and at the commencement of the sound rectum there was almost a firm cartilaginous ring, barely allowing the end of the finger to be pressed through.

Sept. 18th.—The perineal band, with some fibres of the sphincter ani, were divided. This relieved the patient in passing her motions.

Oct. 29th.—Mr. Brown divided, by subcutaneous incision, the entire coccygeal attachments of the sphincter and levator ani.

Nov. 4th.—Bowels opened to-day, with perfect freedom from pain, more than she had known for the last sixteen months.

Remarks.—It was quite impossible to do any

more for this poor patient. No amount of ingenuity could make a new perinæum.

CASE 15.—L. B.—, aged forty-eight; complete laceration through the sphincter of twenty-one years' duration; operation; relief; second operation; cure.

Admitted into Boynton ward, under Mr. Baker Brown, on Oct. 21st, 1856. Has had eleven children. Was confined of her first twenty-one years ago, after a tedious labour. She had no control over the bowels after that time. Each successive labour appeared to make matters worse.

Oct. 22nd.—I performed my usual operation.

24th.—Fever and diarrhœa come on, which necessitated the removal of all the sutures, and of course materially arrested union of the parts.

27th.—Catamenia appeared.

After many days of diarrhœa, she gradually recovered, and left the hospital, on Dec. 10th, with partial union and ability to hold the motions when the bowels are not relaxed, and then some feces pass through the recto-vaginal opening.

She was re-admitted on Jan. 13th, 1857, and on Jan. 14th, I performed my usual operation *de novo*.

Jan. 16th.—Deep sutures removed.

24th.—Superficial sutures removed, and the bowels opened.

Feb. 21st.—Discharged quite cured.

Remark.—It appeared on inquiry that she had suffered from diarrhœa for four months before entering the hospital; hence the cause of the failure of the first operation.

It will be observed, that of these fifteen cases, twelve were completely and effectually cured; one was partially successful; one was a good deal relieved, though, from the character of the injury, I could not undertake my usual operation; and one was unsuccessful. In all the cases, I wish to mention that there was more or less prolapsus of the uterus. In some, it descended to the external parts; whilst in others it had not become so severe, but still was present; and in all it added most materially to the pain, suffering, and wretched condition of the poor creatures, whose lives were already a misery to themselves and those about them. This confirms me in the opinion I formerly expressed, that prolapsus of the uterus was one of the necessary sequences of ruptured perinæum, a fact which was denied in some quarters when I first wrote upon the subject. I wish to make a few remarks upon those cases where the result was unsatisfactory.

First, the unsuccessful case. This woman deceived me about her age. When she first came under my care, she stated it to be fifty-five, but it was proved afterwards to be sixty-five. Further, it was discovered after the operation that she was in the habit of taking large quantities of opium to alleviate her pain, as well as of drinking large quantities of gin. Had I known these facts before the operation, I should not have performed it. The attack of paralysis with which she was seized whilst in the hospital was an additional proof of

her broken-up system. There appeared no vigour or power left in her system. The hæmorrhage which took place further weakened her a good deal, and appeared to come on more from want of coagulating power in the blood than from any particular vessel.

Secondly, the partially successful case. This lady was born without any anus, and an operation was performed soon after birth in order to produce one. It consequently was very deeply retracted, (at least two inches above its normal situation), and was very small and contracted, as well as irritable. The tendency to prolapse of the bladder was a great disadvantage, and altogether nothing but a strong desire to alleviate somewhat her constant sufferings induced me to attempt an operation. It must further be borne in mind, that the length of time this state had existed had added most materially to the difficulties to be contended with under the peculiar circumstances.

Thirdly, the case of partial relief. This poor woman was in a most miserable condition. Fully two inches of the rectum itself had sloughed away. The permanence of the symptoms of disease in her rectum previous to her confinement showed that there already existed a strong tendency to mischief, which would be aggravated at the time of labour. There was a slight band of superficial perinæum and a few fibres of the sphincter, which appeared to add much to her sufferings, and when I divided them she was much relieved. It took away the tension of the parts. The entrance into the rectum being closed by an almost cartilaginous ring, which barely allowed the passage of the finger, whilst it showed what Nature under circumstances will do, nevertheless was a further obstacle to relief being obtained. After a most mature consideration of the whole bearings of the case, I determined to divide the sphincter and levator ani muscles from their coccygeal attachments, and I did so by subcutaneous incision, as recommended by Mr. Hilton. This allowed the parts to fall into a more natural position, and relieved their state of tension, as well as allowing the fissures to heal and the parts to become more sound. No ingenuity could do more than this for the poor woman. She expressed herself as having much greater comfort and freedom from pain than she had known for a long period.

It will be seen, that if we add these cases to those formerly published, it makes my present number stand thus: forty-seven cases operated upon, of which forty-two were perfectly and entirely successful, two partially successful, one relieved, one unsuccessful, and one death; or, excluding the case I have just considered, and which cannot fairly be classed with my operation, I show forty-six cases, with forty-two perfect cures, or an average of 91.30 per cent. This percentage, large as it is, would, I have no doubt, be much increased. It requires very careful dissection merely to take off enough mucous membrane, for the purpose of making a raw surface, without leaving small pouches in the cellular tissue be

neath to become the seats of the ulcerative process. Upon the whole, the results are most satisfactory, as showing how one of the most painful and wretched conditions to which females are liable is now entirely under our control, and can with almost certainty be cured.

Connaught-square, Hyde-park, 1857.

REPORT OF A CASE OF ASIATIC CHOLERA.

By HENRY MADER, M.D.

ON Wednesday, Aug. 12th, I was called to a gentleman in Gower-street, who had the following symptoms:—Complete prostration, speaking in a whisper; violent cramps, particularly in the feet, legs, and abdomen; finger-nails purple, and the skin of the fingers shrivelled and cold, like those of a dead subject; the arms, legs, and feet were also quite cold; the eyes were dimmed and sunken, and, as there was labouring for breath, the face wore a most anxious expression; pulse feeble and irregular, with sickness and profuse evacuations of rice-water stools. The patient was evidently sinking from an attack of real Asiatic cholera. I immediately ordered hot water to the feet, warm flannels to the legs and arms, placed a large mustard poultice over the whole abdominal region, administered stimulants, and prescribed the following mixture:—Acetate of lead, fifteen grains; acetic acid, half a drachm; tincture of opium, half a drachm; tincture of capsicum, eight minims; and peppermint-water to six ounces: two table-spoonfuls to be taken immediately.

On calling again, in an hour, I met Mr. Weekes, of Bloomsbury, the regular medical attendant, and we had the satisfaction of finding that the mixture had kept down, and that, although previously the evacuations had been constant, they appeared now to have ceased. The other symptoms had undergone no material change: the patient's whispers were scarcely audible, tongue dry and furred, urine high coloured, and in small dribbling quantities. The mixture was ordered to be taken every hour; we also ordered iced water to allay thirst, port-wine, and the constant application of warmth to the extremities. In the evening, reaction had commenced; pulse quick, but still weak and irregular; returning warmth; slight sickness, but no diarrhœa; cramps in feet and legs still severe. The above treatment was persevered in during the night.

The next day, August 13th, we found reaction perfectly established: voice still husky and indistinct; cramps in legs troublesome; pulse improved, tongue furred and accompanied with considerable thirst. Mixture to be taken less frequently, and iced water more freely. Late in the day a copious dark watery stool came away, having the appearance of discoloured rice-water, which may probably have been owing to the action of disengaged gas on the lead taken into the system. Mixture to be taken at shorter intervals.

Aug. 14th.—Has had a good night; perspired profusely; no diarrhœa; tongue still coated, but moist; pulse almost natural; passed a little more

urine; ominous rumbling sounds in the intestinal canal, but without pain. Ordered beef-tea and moderate quantities of port-wine with arrowroot; a dose of the mixture at night, to be repeated, if necessary.

15th.—Improved in every respect; bowels have not acted. To discontinue the mixture. Ordered mercury with chalk at bed-time.

16th.—Continues to improve. Bowels not having acted, ordered castor oil.

17th.—Quite convalescent; feels weak, but able to get up and walk about. The castor oil has acted three times; stools dark, bilious, and partially firm; appetite returning. Ordered quinine mixture, and a little carefully got-up meat diet.

As the object of publishing cases of this kind is to draw from them practical deductions, I should be glad to be permitted to offer one or two remarks. The mixture I employed in this case, and which acted so admirably, was recommended to me by a practitioner in 1854. I then held an appointment under the Local Board of Health, and besides several hundred cases of diarrhœa and choleraic diarrhœa, I treated several severe cases of genuine cholera. Six of the number terminated fatally, but in the majority of them I proved the efficacy of the means employed in this case. There was one extreme case, at the bottom of Rathbone-place, which two medical men and others will well remember yielded to the same treatment; not, however, before I was fortunate enough to subdue a violent sickness by giving creosote. As an astringent, the plumbi acetate seems to act quicker and better in solution than in pills, and it is an advantage to be able to combine with it the tincture of capsicum, which certainly seems to stimulate and comfort the patient, whilst it assists the opium in relieving painful spasms. In 1839 I attended cases of cholera at Bow, and was in the habit of giving calomel. After that fearful visitation had passed away, on reviewing my cases, I entertained the opinion that calomel was injurious: my subsequent experience has only tended to confirm this opinion. To me, it has appeared to add to the oppression of the patient at a time when he requires to be supported and even stimulated; and from its well-known effects in other cases, it must necessarily keep up the excessive irritation in the mucous coat of the intestines, and the consequent serous effusion which helps to kill the patient. In the opportunities I have had (many of them at Guy's) of seeing post-mortem examinations in cases of cholera, the gall-bladder has invariably been found distended with bile. It appears to have been prevented from emptying itself into the usual channel by a spasmodic closure of its neck, or from the ductus communis and its connexions partaking of the general spasm affecting the system. If this is the case, what good can calomel do? The liver does not want stimulating—there is already an abundance of bile. Is it not better, in collapse, and in the dangerous stages of the disease, to trust to stimulants, astringents, and antispasmodics? The latter will bring about what

is supposed to be the effect of mercury in such cases—the passage of bile. When the severe symptoms are over, the internal organs having passed through a state of congestion, a mild mercurial appears to be advisable, and, as in the foregoing case, will probably act well. Of course there will be differences of opinion on these views; but the case I have related will serve to show, first, that our old enemy the cholera is amongst us; and secondly, that in a very severe form, in the stage of collapse, it has been met and treated successfully.

Howland-street, Fitzroy-square, Aug. 1857.

REPORT OF A CASE OF VESICO-VAGINAL FISTULA CURED IN FIVE DAYS BY A NEW FORM OF OPERATION.

By J. H. SAWYER, M.D., L.R.C.S.I.,

MASTER OF THE COOMBE LYING-IN HOSPITAL, AND PROFESSOR OF MIDWIFERY TO THE ORIGINAL SCHOOL OF MEDICINE, PETER-STREET, DUBLIN.

On the evening of the 17th of May, 1856, I was sent for to the Coombe Lying-in Hospital, in the absence of Dr. Ringland, the master on duty, and for the first time saw the subject of the following case:—

Fanny W—, aged twenty-four, remarkably small and very excitable, married fifteen months, first child, admitted into the labour ward at three P.M. on the previous day. She stated that labour had set in on the 15th, and that the waters had come away before her admission. On examination, the os was found fully dilated; head presenting; pains strong and frequent.

On the ensuing day, as she had not made progress, Dr. Kidd, the assistant, was sent for. He promptly introduced a catheter, though with considerable difficulty, owing to the pressure of the head on the pube. Having relieved the bladder, and finding no other urgent symptoms, he directed that he should be sent for if the labour had not terminated by ten P.M. I saw her at eleven P.M., in consultation with Dr. Jameson, and found her in a state of exhaustion, with quick, feeble pulse, irritable stomach, and the external parts tender, hot, and dry. Under these circumstances, and as the head had remained stationary upwards of nineteen hours, we decided at once to terminate the labour. I could not detect the foetal heart; but as the placental soufflet was evident, and the pupil on duty assuring me that he had heard the foetal tic a short time previous, I was reluctant to resort to the perforator. I succeeded with some difficulty in introducing the blades of Churchill's forceps obliquely, and, after considerable effort, extracted a large male foetus. She made a good recovery in all points, with the exception of suffering from incontinence of urine, which set in about the fifth day after the operation. The formation of a recto-vaginal fistula was ascertained; but as her general health was impaired, she was directed to try change of air, and return to the hospital after two or three weeks' sojourn in the country.

She was re-admitted on the 1st of July, and, on

examination, a transverse oval aperture was ascertained immediately above the neck of the bladder, through the vesico-vaginal septum; it measured eight lines in its long diameter, and the finger could be readily passed into the cavity of the bladder. The narrowed condition of the vagina, combined with the soreness resulting from the extensive excoriation, made the examination very difficult. The patient complained that the moment she turned in the bed, or assumed the erect posture, the urine flowed away. She said her life was miserable, that she was offensive to others, and unable to earn her subsistence, and would gladly submit to any operation. Various attempts were made to relieve the extreme sensibility of the parts. Carbonic acid gas (as suggested by Dr. Simpson), was injected, and the vapour of chloroform, through Dr. Hardy's chloroform bellows; but instead of diminishing the soreness, such aggravated suffering, with increased contraction of vagina, was induced, that I was compelled to postpone the operation from the 15th to the 25th. Two days prior to that date I cautiously dilated the vagina with plugs of prepared sponge, smeared with extract of belladonna, which proved an admirable anæsthetic.

Having previously cleared out the bowels, I secured her in the position for lithotomy, and proceeded to operate in the presence of Drs. Montgomery, McClinton, Churchill, Ringland, and Mr. Maurice Collis. It had been intended to use chloroform; but after a few inspirations the sudden irregularity of the heart's action compelled us to desist. Two dilators were first introduced, and pressed obliquely upwards and outwards. The third pressing down on the recto-vaginal septum enabled me to get a good view of the fistula. A full-sized catheter passed through the urethra, and pressed downwards and forwards, kept firm the posterior margin of the aperture, and prevented the bladder from coming in contact with the knife. With a long-handled, double-edged knife I carefully split the vesico-vaginal septum at the posterior lip to the extent of three lines, carrying the knife completely around the commissures, and keeping close to the vesical surface. I then did the same to the lower and anterior margin, but with greater difficulty, as its aspect was turned from me. The constant welling of blood and urine compelled me to work very slowly. I then syringed with cold water, which in some degree repressed the bleeding, and with the ordinary fixed needle, as used in a similar operation by Mr. M. Collis, I inserted four ligatures of strong brown thread at intervals of three lines, carefully avoiding penetrating the vesical mucous membrane. I secured the ligatures over two bars of gutta percha, and was most cautious not to draw the thread too tight, thus preventing the risk of strangulation of the margins enclosed between the quills. The operation lasted about half an hour.

She was then placed in bed on her face, her body well supported by pillows, a long gum-elastic catheter was passed and secured, and one grain of opium was directed to be given every third hour.

On the fourth day, I examined, and was gratified to find the margins of the wound in perfect apposition, and no suppuration. I divided the ligatures, but did not remove them until the following day—that is, the fifth from the operation. The union was complete, but I did not venture to withdraw the catheter or act on the bowels, until the eighth, when they were gently moved by a mixture of castor oil and tincture of rhubarb.

On the eighteenth day, she was walking about the ward. She said she was able to retain her urine, and her only inconvenience was a tendency to micturate frequently. This gradually subsided, and on the 14th of August she was discharged in perfect health, and is at present in a good situation, and, as she declared to me, as well as ever she was in all her life.

This mode of operating appears to me to possess the following advantages:—

1. Facility of execution.
2. Probability of speedy union by adhesive inflammation.
3. The prominence of the vesical flaps forms an admirable barrier to the urine insinuating itself.
4. Comparative freedom from hæmorrhage.
5. If it does not succeed, there will be no increase of the fistulous aperture, as after other plans.

Dublin, 1867.

REPORT OF A CASE OF DISLOCATION OF THE ANKLE WITH FRACTURE OF TIBIA, FOLLOWED BY NECROSIS OF THE WHOLE ASTRAGALUS.

By R. BARWELL, Esq., F.R.C.S.,

ASSISTANT-SURGEON TO THE CHARGING-CROSS HOSPITAL.

On the 27th of October, I was asked to see Mrs. G—, in consultation with Mr. Creed, of Greenwich. The patient is fifty-six years old, somewhat intemperate, and of very impatient temper. She is subject to bilious attacks, violent indigestions, and irregular purgings. The following account of the case previous to my seeing her is from the description of Mr. Creed:—

On the 10th of October she was jumping from a height and injured her foot, so that the above-named gentleman and his assistant Mr. Haddlesey, were called. The foot was dislocated outward, the fibula being broken about an inch above the malleolus. The tibia had suffered comminuted fracture, the upper break being from three to four inches above the joint. The inner malleolus was broken off, and remained attached by its ligamentous connexion to the astragalus. The lower edge of the shaft of the tibia, which corresponded to this fracture, projected violently against the skin, and nearly broke through it. The patient was much excited and very impatient of control. The dislocation was with some difficulty reduced, and the limb put upon two lateral splints. She would not, however, remain quiet, but moved about, first to one side, then to the other; sometimes she took off the splints.

October 27th.—When I saw her the leg was in two lateral splints. She complained much of pain in the foot, and running up the tibia. On removing the splints, the inner side of the ankle was found red, puffy, and glazed. A wound, discharging pus and synovia, ran from before backwards the whole breadth of the inner malleolus immediately over the fracture. The foot was in very good position, but the lower end of the tibia projected inward; crepitus was distinct on twisting the foot laterally. The pulse was rather weak, about 100; appetite feeble. She had irregular purgings. Such, however, had been her condition for some weeks previous to the accident, and did not therefore show so grave a disturbance as if it had been the result of the injury. I placed the limb on an outside splint, bandaging so that an uncovered part remained over the inner ankle for the application of poultices. The leg was then swung in a cradle in such a position as to allow the discharge to gravitate out of the wound. She was to continue the sulphuric acid, which seemed to agree. Some strengthening diet was ordered, and she was put upon a distinct allowance of her accustomed stimulus.

Nov. 20th.—The patient has been very restless; she will not keep the splints on for any length of time, nor will she lie still. Nevertheless the fracture in the fibula has united, also the upper one in the tibia. The malleolus has not united to the rest of the bone; the wound over its fracture is gaping and discharging. A short distance above it an edge of bone may be felt beneath the skin; that I take to indicate a third and ununited fracture of the tibia, particularly as crepitus may still be felt on slightly twisting the foot. I also expressed an opinion that much bone was diseased and would die, and that amputation must shortly be proposed.

It is useless to describe the various slight changes that took place. Suffice it to say that in the first week of February I found the detached malleolus and the lowest fragment of the tibia itself, as I believe, dead; for rough bone could be felt on every side with a probe passed into the wound; and on pressing the foot outwards towards the joint, pus flowed abundantly. I proposed amputation, which was, as I expected, refused. I then pointed out the uselessness of my continuing an attendance, as with her present views, she could not gain further benefit than the fully-competent attendance of Mr. Creed would afford. I promised, however, if any notable change should take place, either in the case itself or in the patient's views thereof, I would again visit her.

On June 25th, I was accordingly asked to see Mrs. G— again. She has not been out of bed since I last saw her; the wound is still opened, and discharges freely, having been more abundant during the past week. Abscesses have occasionally formed about the inner ankle, and portions of bone, chiefly fragments of the inner malleolus, have come away. Pus flows, as from the joint, when upward pressure is made on the sole of the foot, and under such circumstances

crepitus is even more distinct than before. The patient has been suffering much pain, and speaks of it, and of total sleeplessness, in an exaggerated manner, for the constitutional state does not indicate so much suffering and unrest as she describes. Pulse 100, feeble; tongue rather white; appetite very fair, considering the length of confinement. I again proposed amputation, and begged that the decision might be speedy, as her state was such that I would not pledge myself to perform it after many days. The proposal was agreed to, and accordingly on the 27th of June, assisted by Mr. Creed and Mr. Haddelsey, I amputated, under chloroform, a little below the middle of the leg, making both anterior and posterior flaps as long as possible, since union by the first intention could hardly be expected. There was but little loss of blood. The stump was dressed, and the patient placed comfortably.

Her condition was for some days unsatisfactory. The chloroform had rendered the stomach impatient of food, and she vomited frequently. The edges of the wound did not unite, but were pale and flabby. On the 1st of July, i.e. four days after the operation, sloughing along the whole edge of the flap set in. Her state was very critical for a day or two, but full doses of ammonia and bark, with the local application of charcoal, had considerable effect. The pulse became stronger and steadier, the appetite returned, the slough was thrown off, and the wound began to unite. On the 8th of August she was able to leave her bed.

The stump is of very good shape, although the sloughing was considerable, because of my having made the flaps longer than I usually do.

Examination of the limb.—The edges of the wound were adhering to the bone at each side; these were enclosed in a circular incision, and the skin stripped from the rest of the limb, and the dissection continued. The tibia was the seat of three fractures, the upper one about two inches and a half above the malleolus had united, but not in a straight line, for the bone below this injury inclined inwards. The next fracture was about an inch below this and inclined downward, opening into the joint; it had not united. The lower portion of the loose fragment was white and carious; the upper still appeared possessed of some life. The inner malleolus, which had been broken off, was gone. The fracture on the fibula, an inch and a half above the outer ankle, had united.

The whole astragalus was dead, of a dark gray or rather purple colour. In front, at the edge of the articulated surface, was a cavity into the cancellous structure of the bone; it was about the size of a horse-bean, was surrounded by sharp, rough edges, and lined by a red membrane similar to that found in cartilaginous ulcerations, but there was no vestige either of synovial membrane or of cartilage in any part of the joint. The space between the tibia and astragalus communicated with the opening in the skin at the inner side. The inner flexor tendons, where they had passed under the malleolus, were bare; a little higher the sheath still remained, and was filled with thin pus.

All the tissues on the inner side were infiltrated with sero-sanguinolent fluid; the muscles at the sole were sodden therewith, and had almost lost their fibrous character and texture.

This case is pathologically remarkable, from the death *en masse* of the astragalus, and its assumption of a dark colour. In ordinary necrosis the osseous structure becomes white, and it usually dies layer by layer; but in this instance the whole body of the bone seems to have suffered simultaneously, remaining in its place without any attempt at separation from the rest of the tarsus, although, from the remarkable increase of crepitus during life, on twisting the foot, it is evident that the bone must have lost its vitality some time before amputation. As far as I know the case is unique; I have not been able to find any report of similar pathological appearances.

Old Burlington-street, August, 1857.

FACTS AND OBSERVATIONS RESPECTING THE PRINCIPLE TO BE KEPT IN VIEW IN REGULATING THE ADMINISTRATION OF OPIUM.

(In a Letter to JAMES WILKES, Esq., Commissioner in Lunacy.)

By RICHARD OLIVER, M.D.

RESIDENT PHYSICIAN TO THE SALOP AND MONTGOMERY CITIES LUNATIC ASYLUM.

MY DEAR SIR,—In compliance with your suggestion, but still unconvinced as to the absolute necessity for giving any explanation of my views respecting the efficacy of opium in certain morbid states of the system, further than that which is contained in a letter addressed some time ago to Dr. Guy, of King's College, London, and published by him in a contemporary of July 16th, 1853, I have drawn up one or two cases, for the purpose of illustrating the practice which you request me to describe. In addition to the statement formerly made respecting the reasons which long ago induced me to depart so far from the beaten track in the employment of the remedy in question, it may not be out of place to refer upon this occasion to other considerations, before proceeding to exemplify the circumstances under which I am in the habit of administering opium, or any of its preparations, in a way which is evidently more apt to excite surprise than to challenge imitation.

When nothing had occurred to contraindicate its use, I was for some time in the habit of being guided in its employment by the general aspect of a patient's symptoms, so far as that might afford evidence of abnormal irritability or weakness. In numerous cases of shock from injury and from surgical operations, in many of the various phases of hysteria, and in every form of disease in which pain is independent of present acute inflammatory lesion; in anæmia when suddenly produced by hæmorrhage, and more particularly when associated with the irritability and low power of the

puerperal state, I had often witnessed the beneficial efficacy of opium in extraordinary doses, and I had learned to lay aside, upon occasion, the restriction by which its administration is commonly regulated. In other cases, when the quantity of blood in the system has been much reduced by chronic menorrhagia, or by any other cause which in like manner tends to withdraw the materials of nutrition from their proper use, I have long depended more upon opium, when given in *ordinary* doses, than upon any other remedy, for restraining the morbid discharge, and for consequently restoring to the system its appropriate power of assimilation and repair. It may perhaps be advisable for me to state, that I would not recommend other considerations in cases of this kind to be entirely disregarded; but when the vascular system has become comparatively empty, it is not often that we meet with any serious local hindrance to the adoption of the course to which I here refer. In delirium tremens, in colic, in uterine phlebitis, in the terrible constitutional irritation produced by certain animal poisons—after dissection wounds, for instance, as you yourself can so well testify—the tranquillizing and salutary influence of opium must be acknowledged by every practitioner who has ventured to measure the quantity of the remedy to be employed by the constitutional necessities of his patient. In addition to the circumstances which I have already mentioned, I must not omit to name the consequences of any exhausting evacuations, such as those of cholera, and the effects of any severe febrile malady which has brought the organic energies of the system to a low ebb,—as well as “the three great symptoms” which have been set down by Sydenham as most particularly indicating the necessity for opium: “*Sunt autem tres, vehemens dolor, vomitus vel dejectio enormior, et insigniores spirituum animalium arætiæ.*”

Speculation with respect to the properties possessed by the alkaloids of the poppy, either as modifying the composition of the blood or as exercising a power over the state of its vessels, or as operating in any imaginable more direct way upon the central sources of animal and intellectual energy, would here at least be a needless, if it were not sure also to be a fruitless, thing. But that they do possess the properties of assuaging pain and of controlling irritation, and consequently also of restraining the waste of nervous power, is beyond all question. The main object with respect to the exhibition of opium, therefore, is to determine the nature and character of those circumstances in which its operation is simply salutary, and to distinguish them from others in which its tendency is more or less deleterious. The adjustment of the quantity of the medicine required to modify or entirely change the morbid condition to which its administration may be deemed applicable, is a consideration of comparatively small importance. In any case where moderate doses were found to be sufficient for the purpose in question, it would be plainly absurd to think of giving large ones; but where

moderate doses are found to be of little or no avail—where the functions of the heart and lungs are not seriously embarrassed, or, in other words, where there is plenty of room in the circulating and respiratory organs—where the urine deposits a large proportion of double phosphate of ammonia and magnesia, and thus indicates a low degree of assimilative energy—and where morbid irritability, directly dependent as it necessarily is upon disturbance of the cerebro-spinal function, distinctly proclaims the necessity for repose—there can be no reasonable question as to the expediency of increasing the quantity of opium.

In thus attempting to advocate this practice, I must beg to have it clearly understood that I am not setting forth any “new light” of my own. Two centuries have nearly elapsed since the same course was recommended by Sydenham, and the tact and discrimination which enabled him to perceive its fitness and to appreciate its value are all the more wonderful when we take into account the little light which physiology had then shed over the art of healing. For a full exposition of his views on this subject, I might here adduce numerous passages from his works; but in order to keep this letter within a reasonable compass, I shall abstain as much as possible from direct quotation, and refer you to various parts of his writings for a confirmation of what I have said. The subjoined extract, however, is so very much to the purpose that I cannot fairly withhold it:—

“9. *Let no one call me rash for throwing in laudanum so confidently.* Experience has taught me that in any of the three great symptoms requiring opiates—intense pain, vomiting or purging, and dejection of the animal spirits—the dose must be regulated both in respect to its quantity and frequency by the circumstances of the case only, since a dose that is strong enough for one system may be too weak for another, and the dose that will endanger the life of one patient may save the life of another.”*

Looking at his opinions respecting the nature and treatment of hysteria, which are based upon age and practical conjecture as to the intimate connexion and inter-dependency of the nutritive and the cerebro-spinal functions—to the literal *consanguinity*, so to speak, of healthy vital action with the material means for sustaining it—a connexion which may be considered as analogous to the relation which industry bears to the capital available for its employment—we shall find them fully expressed in the second volume of Dr. Latham's translation (in paragraphs 119, 121, 122, and 123, at pp. 108–9). Throughout these writings, the principle enunciated—that of sustaining and economising vital power under all circumstances—is never lost sight of for a moment; and the only thing to be depended upon, as a sheet anchor, under the most extreme danger from exhaustion, is declared to be opium.

* The Works of Thomas Sydenham, M.D., translated by R. G. Latham, M.D., and printed by the Sydenham Society, vol. II. p. 8.

Having already referred to some of those circumstances which first led me to forejudge the expediency, and of course, the safety, of the practice which I here find myself attempting to vindicate, I may take this opportunity of stating that it was not before I had come to close quarters with insane patients, had lived with them for years, and had become familiar with their enfeebled assimilative energies, and with the miserably low condition which commonly prevails amongst the poorest class of lunatics, and which often forms "the very head and front" of their disease, that I ventured, in cases of extreme irritation and of extreme organic debility, upon confidently carrying the mode of treatment now under consideration to its fair and legitimate limits.

Other considerations connected intimately with the groundwork of these views might here be not inappropriately discussed; but I apprehend it will be better to restrict the present communication to its special subject, than to direct attention to other matters, however closely related to it, or however important, before I proceed to give you a brief account of the few cases which ought, I think, with the preceding observations, to serve sufficiently for its elucidation.

I take the following case out of a great number, first, because it is that in which I carried the practice in question to a greater extent than I ever found occasion to carry it in any other instance; and also because you yourself, having subsequently had the patient under your own observation for some time, may be the better able to form a clear and distinct impression respecting the constitutional requirements of his case under the circumstances to which I shall refer.

A. B., No. 479.—Male; aged forty; unmarried; of sanguine temperament, and unusually fat and fleshy; in good circumstances; actively engaged in conducting a flourishing business, and travelling a great deal on that account; generally living freely, and sometimes drinking to great excess. Admitted January 30th, 1851. Reported to have been insane for three weeks, during the whole of which period he had been restrained by a straitwaistcoat, confined to a badly-ventilated room under the care of "a keeper," subjected to strict antiphlogistic regimen, and had had little or no sleep.

At the time of his admission into the asylum he was excessively restless and agitated, and had an irresistible propensity to destroy things; his complexion was as pale as marble; his lips were tremulous, and his looks wild and haggard. The heart's power was feeble; and although he could not properly be described as being much emaciated, his flesh was soft and flaccid. His abdominal excretions were very offensive; but the state of the urine, which commonly affords the surest criterion as to the expediency either of using opium freely, or of refraining of its employment altogether, was not easily ascertainable. However, as there could be no doubt respecting the urgent need for controlling the irritation under which he was suffering, by administering regular supplies of

food and by using means for procuring sleep, recourse was at once had to the use of opium, and pains were taken to induce him to eat.

The subjoined abstract from the prescription-book will serve to mark the degree of exhausting irritation by the quantities of the remedy administered from day to day. For the first few days, little or no impression was perceptible. The exhibition of food was not always an easy thing; but with stimulants and his anodyne medicine there was less difficulty.

First day, Jan. 30th, 1851.—Nine A.M.: Hydrochlorate of morphia, three grains; one P.M., three grains; nine P.M., three grains: total nine grains.

Second day, Jan. 31st.—Nine A.M.: Hydrochlorate of morphia, three grains. N.B. this dose was vomited.—Eleven A.M.: Hydrochlorate of morphia, one grain; half-past one P.M., three grains; nine P.M., three grains: say seven grains.

Third day, Feb. 1st.—Nine A.M.: Hydrochlorate of morphia, five grains; two P.M., five grains. N.B. This dose, given with beef-tea and eggs, was vomited.—Four P.M.: Hydrochlorate of morphia, five grains. This dose was immediately preceded by five drops of creosote in a little brandy.—Half-past nine P.M.: Hydrochlorate of morphia, five grains. Say fifteen grains.

Fourth day, Feb. 2nd.—Nine A.M.: Hydrochlorate of morphia, five grains; half-past one P.M., five grains; six P.M., five grains; nine P.M., powder of opium, ten grains; twelve P.M., ten grains. Fifteen grains of hydrochlorate of morphia and twenty grains of powder of opium in the course of the fifteen hours.

Fifth day, Feb. 3rd.—Nine A.M.: Hydrochlorate of morphia, five grains; two P.M., five grains; nine P.M., five grains. Fifteen grains.

Sixth day, Feb. 4th.—Nine A.M.: Hydrochlorate of morphia, five grains; two P.M., five grains; nine P.M., five grains. Fifteen grains.

Seventh day, Feb. 5th.—Nine A.M.: Hydrochlorate of morphia, five grains; two P.M., five grains; nine P.M., five grains. Fifteen grains.

Eighth day, Feb. 6th.—Nine A.M.: Hydrochlorate of morphia, six grains; two P.M., six grains; nine P.M., six grains. Eighteen grains.

Ninth day, Feb. 7th.—Two A.M.: Hydrochlorate of morphia, six grains; six A.M., six grains. Twelve grains.

N.B. Taking the eighth and the ninth days together, it will appear that thirty grains of hydrochlorate of morphia were administered in the course of twenty-one hours.

The general symptoms of the affection having been briefly mentioned at the commencement, it would be superfluous to repeat their description from day to day, and I shall only say here, that in their character up to the present period, they had undergone little or no change, but were merely so far moderated as to have admitted latterly of a few hours' sleep during each night. The lower bowels had been effectually unloaded by means of enema, on the day after his admission,

and had been subsequently moved without the use of aperient medicines on one or two other occasions. The urine had not been deficient in quantity. A warm bath had been used at least once every day, and he was taken out to walk every evening by two attendants as soon as it became possible to induce him to wear his clothes.

On the ninth day after his admission, however,—that is, on the 7th of February,—a change was observed. He was not more rational than he had been; but he was less disposed to rave, and more inclined to lie still, although he was still what might appear to be more than sufficiently watchful. About nine A.M. it was noticed for the first time since his admission, that the floor of his room was perfectly dry, and, consequently, that he had passed no urine during the night. He had no desire to do so, and as there was not the slightest distension of the hypogastrium, it was presumed that the function of the kidneys was interrupted. The bowels being likewise torpid, no time was lost before giving him five grains of alomel, and three drops of croton oil. The same quantity of calomel, and four drops of croton oil were again given at two P.M.; and after these medicines had acted freely on the bowels, two tablespoonfuls of the following mixture were given every hour, whilst the morphia, under these circumstances, was of course discontinued:—Acetate of potash, six drachms; nitric ether and tincture of squills, of each half an ounce; water, seven ounces.

On the 10th day after his admission—that is, on February 8th—half an ounce of tincture of hyoscyamus was exhibited at bedtime; and on the eleventh day, when the activity of the kidneys had been re-established, the employment of the morphia was resumed.

On the ninth of February, six grains of the hydrochlorate were given at bedtime.

On the twelfth day the form of the remedy was altered. Tincture of opium in the dose of two drachms was given three times a day.

Thirteenth day, Feb. 11th.—Nine A.M.: Tincture of opium, two drachms; two P.M., two drachms; nine P.M., two drachms: total, six drachms.

Fourteenth day, Feb. 12th.—Nine A.M.: Croton oil, two drops; hydrochlorate of morphia, three grains.—Four P.M.: tincture of opium, two drachms; nine P.M., two drachms: total, three grains of hydrochlorate of morphia and half an ounce of tincture of opium.

Fifteenth day, Feb. 13th.—Nine A.M.; Tincture of opium, two drachms; two P.M., two drachms; nine P.M., two drachms: total, six drachms.

Sixteenth day, Feb. 14th.—Tincture of opium in the same doses and after the same intervals as yesterday: total, six drachms.

Seventeenth day, Feb. 15th.—Nine A.M.: Tincture of opium, two drachms; two P.M., two drachms.—Nine P.M.: Opium powder, five grains; calomel, four grains: total, half an ounce of tincture of opium and five grains of powder of opium.

About this period the approach of a general improvement in his condition was discoverable. His nights were less sleepless, and his conduct became gradually more orderly. The repetitions of the opiate in the daytime were no longer necessary, and he went on with no more than his night draught, containing two drachms of laudanum, for several months. After the maniacal excitement had in a great measure subsided, he took citrate of iron with ammonia for some time, and subsequently decoction of cinchona with iodide of potassium. He also took occasionally a draught of rhubarb and senna with sulphate of magnesia. The croton oil and calomel had not been selected as the most appropriate medicines of the kind in this case, but were given instead of less depressing aperients, in consequence of his refusal at the time to swallow any other. An ample supply of nutritious food, with a good allowance of malt liquor, free exercise in the open air, with such amusements as the place could afford, were the only other remedies employed. About the 22nd of June he entirely ceased to take opium, as he could sleep well, and was very comfortable without it, and on the 24th of July he was discharged recovered.

His apparently restored health, as you are aware, was not of long continuance. On returning home he was unable to resist the temptation to put his hand to business again. From the excitement thereby produced it was an easy step into his old habits of intemperance, and another violent outbreak of mania was speedily induced. An irritable brain that should have been subjected to no kind of excitement was again stimulated and overstrained; and symptoms of permanent organic disease, which has been but remotely threatened in the first instance, were fully developed, I believe, at the time when his case first came under your own observation.

The next case that I shall mention is one which I have reason to suppose that you also saw:—

C. D., No. 983, female, aged twenty-four, admitted Oct. 3rd, 1855; a laundress, living at home with her parents in humble, but respectable circumstances, and remarkably well educated for her station in life; was engaged to be married to a person who suddenly disappointed her. To relieve the distress and depression thus produced, her friends consented that she should leave home for change of scene at a period when she must have been very unfit to take care of herself, and in a short time afterwards it was found necessary to send her to the Stafford County Asylum. In the course of a few weeks she was discharged from thence, to all appearance recovered, and was brought back by her friends to this county. She had not been long at home before she again became ill, and was then brought here. At the time of her admission she was suffering under the most inconsolable sadness and despair. Sleep had entirely forsaken her. She obstinately refused food, and was incapable of paying the least regard to the state of either

her clothing or her hair. The general debility of her system was manifested by emaciation, amenorrhœa, and profuse spontaneous ptialism. The skin was shrunken, the bowels were constipated, and the urine deposited abundantly crystals of the double phosphate of ammonia and magnesia. As there was no other possibility of inducing her to take food, she was fed by means of the stomach-pump, and three grains of hydrochlorate of morphia were regularly given for some time with her evening meal.

After going on in this manner for about a fortnight without any perceptible sign of amendment, the hydrochlorate of morphia was exhibited in the dose of four grains and a half of the medicine daily. She proceeded for several weeks, sometimes willingly receiving, but not unfrequently refusing, her food; and beyond the acquisition of three or four hours' sleep every night, making but very little satisfactory progress.

On the 1st of December, with the view of controlling a more than ordinary degree of agitation and distress, six grains of the hydrochlorate of morphia, and on the 2nd, five grains were exhibited, in addition to the regular doses through the day. This, so far as was intended, had its proper effect, but yet there was no decided approach to convalescence. Her dress was still habitually neglected, and her face was seldom seen but in tears.

On the 7th of December a more energetic practice was determined upon. Fifteen grains of powder of opium were given in the forenoon, and the same quantity was repeated at bedtime.

On the following day there were unmistakable evidences of improvement; and in three days from the time at which she commenced taking the remedy in this way not the slightest trace of her malady was perceptible in either her appearance or her conversation, or in the state of her dress. The circumstance of her having previously fallen away from her improved condition so soon after leaving Stafford suggested a caution with respect to these outward evidences of amendment; and notwithstanding the speedy restoration of her strength and flesh, and her return to active and orderly habits, the treatment last mentioned—viz., the administration of fifteen grains of powder of opium twice a day—was steadily continued until the 14th of February, 1856. At that time she ceased to take the opium in the form of powder, and commenced with the use of the tincture of opium in the dose of half a drachm three times a day, in combination with hydrochloric acid.

The only thing that remained to cast a doubt on the security of her convalescence was the continued suspension of the catamenial function. For this reason she was sent from the asylum on the 28th of February, not as recovered, but only "on trial;" and on the 4th of April last, after having entirely discontinued the use of opium for about five weeks, she was finally discharged on the authority of a certificate of her recovery from a medical practitioner, who is intimately acquainted with the circumstances of her case.

On the 12th of the present month (September) the answer which that gentleman gave to my inquiry respecting her was: "She has in every respect gone on well, becoming quite robust, and looking extremely healthy."

I cannot suppose it to be necessary for me to give particular descriptions of many cases in this way, for the purpose of manifesting not only the safety but the efficacy of the practice in question; but I may mention briefly that at the present time, besides the number of persons who are taking opium in ordinary doses, there are fifteen individuals who respectively take it regularly in the following forms and quantities:—

	Men.	Women.
Hydrochlorate of morphia— Six grains three times a day.	0	2
Powder of opium— Fifteen grains twice a day . .	1	1
Ten grains twice a day . .	1	0
Fifteen grains once a day . .	1	0
Ten grains once a day . .	0	1
Five grains twice a day . .	2	0
Five grains once a day . .	6	0

Before concluding this lengthy epistle, I am tempted to give you an account of two cases which occurred in private practice, and which may serve right well to "thicken the other proofs" I have adduced, although those, you must allow, can scarcely with fairness be said to "demonstrate thinly."

I have no doubt that you distinctly remember the circumstances of our meeting in Scotland in 1853; and you most probably have not forgotten what I told you respecting the case of a patient whom I accidentally saw on the 9th of September in that year, as we were returning from the North. Four months after that period I was requested to communicate with her medical attendant respecting the treatment of her complaint, and the following extract from my letter to him, in reply to his statement of her case, may probably be not much out of place upon the present occasion:—

"I think I know the circumstances of your patient's case, at least the leading points, sufficiently well to spare you the trouble of entering into any detailed description of the symptoms. I saw her not many weeks after the period of her confinement, and I then noticed very decided indications of her inability to sustain the burden of her new duties. The shock of parturition had not merely impaired her mental energy, but had inflicted a most serious injury on her assimilative functions; and this fact kept steadily in view, without allowing its consideration to be disturbed by any hysterical imitations of local mischief, will be, I believe, the truest guide in the treatment of her case. In all such affections the great remedies are food and sleep. The friends and

attendants of patients of this class are exceedingly apt to overlook the necessity for a more abundant ingestion of nutriment than is usual with them; and hence, in a great measure, proceeds the general downward course of melancholic patients at home. Whatever, therefore, can promote the appetite and give tone to the digestive organs will tend to good; but for the complete comfort and restoration of the patient we must look not merely to the preparation of good chyle, but of good blood also. This is not a season (Jan. 5th, 1854) to recommend exercise out of doors for a very debilitated person; but at all times we have the opportunity of augmenting, more or less, the amount of iron in the system, whether we possess the means of coining it quickly into blood-corpuscles or not; and we are not without the power, also, of soothing to a great extent the dreadful anxiety which so commonly prevails under these circumstances, by procuring sleep through the use of opium. In such a course there must be no timid misgivings. The administration of the latter remedy must be bold and steady; and if, as is usual, there be much tendency to constipation, we need not be particularly solicitous even about that; as the state of the bowels will get to be regular when the nervous centres come to be properly nourished, and when the muscular coat of the intestines receives its due amount of innervation. The secretory apparatus, in like manner, must be dealt gently with; and it is most advisable to abstain from the employment of mercury in any form or quantity. We have more depression in such cases than we want. From these hints you can be at no loss to conceive what my views are respecting the nature and treatment of this class of maladies; and if you see no reason to disapprove of them in the present instance, you will probably put my suggestions to the proof forthwith."

On this recommendation the practice was immediately adopted. Three teaspoonfuls and a half—that is, in other words, three drachms and a half of Battley's sedative liquor of opium, were given at bed-time; and in this manner the remedy was regularly administered for a considerable period. The effect, as I was informed, was at once very strikingly favourable. Comfortable sleep and mental tranquillity immediately succeeded nights and days of watching and trouble; returning strength kept pace with the steady increase of appetite; and in the course of a short time I had the pleasure of hearing that she was quite well.

In another case which I saw, the use of hydrochlorate of morphia had been deemed advisable by the medical attendants, and they had gradually ventured upon the exhibition of four grains for a dose, but without obtaining for the patient the degree of comfortable repose for which they hoped. At length it occurred, through mistake, that three doses (twelve grains of hydrochlorate of morphia), instead of a single dose, were given as a night-draught. This circumstance was soon discovered, and excited very considera-

ble alarm for a time; but as the patient, after a night of sound sleep, awoke on the following morning with calm and comfortable feelings, and with her reason comparatively undisturbed, the apprehensions of her friends and attendants were speedily dissipated; and from that period, I am given to understand, they dated the commencement of her convalescence.

Apprehensive that I have wearied your patience by this long letter, but anxious, nevertheless, to remove every impediment to the establishment of a practice from which for many years I have been constantly witnessing so many benefits, I shall conclude my observations by briefly referring to the leading general circumstances which not merely justify, but require, the administration of opium in the manner which I have attempted to describe.

Although I should be unwilling to try conclusions with Dr. Latham on a question of mere philology, I cannot help thinking that by a freer and less ambiguous translation of the phrase—"insigniores spirituum animalium aragias"—than he has given—viz., "great dejection of the animal spirits," the author's real meaning would have been more distinctly communicated to the modern English reader by some such expression as *great exhaustion of nervous power*, or by any other form of words which would convey the same signification with equal clearness. This circumstance, then, being dependent upon want of harmony between the cerebro-spinal and sympathetic centres, forms one of "the three great symptoms" which, according to Sydenham, peculiarly require the use of opium. To his observations I can only add, that the facts which most certainly prove the existence of this necessity are those which indicate both that the process of sanguification has been seriously impaired; or, in other words, that the quantity of blood in the system is insufficient for the general purposes of nutrition; and that some of the most essential elements of neurine are either wasted too rapidly in the wear and tear of the vital processes, or cease to be separated from the blood for the ordinary purpose of repair. In short, when the urine deposits crystals of the double phosphate of ammonia and magnesia, and when there can be no doubt respecting the simultaneous existence of anæmia, there should be no hesitation as to the expediency of pushing the administration of opium as far as may be necessary to "subdue" irritation, and to obtain the greatest practicable amount of comfort and repose.

With the warmest esteem and regard, believe me to remain,

Most sincerely, your attached friend,

RICHARD OLIVER.

J. Wilkes, Esq., Whitehall-place.

To the Editor of THE LANCET.

SIR,—The following passages, extracted from a letter written by Mr. Joseph Allen, of the Royal

Infirmary, Liverpool, and dated April 3rd, 1857, so powerfully corroborate the principle which I have endeavoured to establish respecting the expediency of adapting the quantity of opium to be administered in certain forms of disease, to the constitutional requirements of the patient, rather than to the supposed normal efficiency of the medicine, that I cannot help laying them before you as a pendant to the observations contained in my letter to Mr. Wilkes, dated September 29th, 1856:—

"I have every reason to be thankful that I went to ——. The practice I learnt there has been the means of saving the life of a patient here, and fully bears out the opium treatment. My patient was admitted in January last, towards the latter end of the month. He was suffering apparently from delirium tremens, but it was soon evident that there was something more, as mania began to show itself. He was allowed stimulants freely, and opium in the shape of tincture or liquor opii (Battley's) was given until he became more composed. He had as much as one ounce of Battley's sedative at a time; but, as I thought it might not be quite genuine, I tried powdered opium, at first in the dose of one scruple, and afterwards in that of half a drachm. I found that the more I increased the dose the better was the effect; so that the day after I gave him the scruple I gave him the half-drachm, and with evident advantage. Once or twice I deemed it advisable to give him three or four grains of calomel; and upon one or two occasions he had four grains of morphia for a dose, and took a mixture of quinine with ether, &c. *In one day he had Battley's sedative, one ounce; powdered opium, two drachms; and about eight grains of acetate of morphia.* . . . I may observe that in the way of stimulus my patient took twenty ounces of brandy, ten ounces of wine, and two or three pints of porter; and, as food, had eggs and beef tea. He is very much better, but is weak, and has occasionally slight relapses. He now takes [daily?] twelve ounces of brandy, six ounces of wine, three pints of porter, milk, four eggs, and chicken or chop. He also takes a mixture, containing in each dose four grains of disulphate of quina, half a drachm of compound spirit of sulphuric ether, twenty minims of chloric ether, and one drachm of compound spirit of ammonia; and, *in two doses, he takes four scruples of powdered opium every night.*"

As my present object is merely to show the length to which this mode of treatment may be beneficially carried, I have no wish to occupy space in your valuable columns by quoting a more particular description of this patient's case, but shall conclude by leaving the facts above stated to speak for themselves.

I am, Sir, yours very faithfully,

RICHARD OLIVER, M.D.

Shrewsbury, 1857

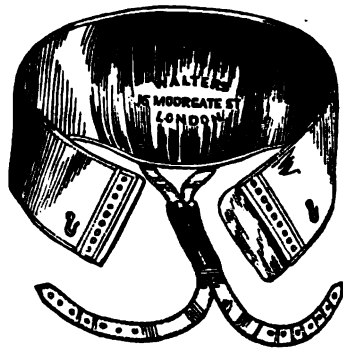
ON THE UTILITY OF A PUDENDAL BANDAGE IN PROCIDENTIA UTERI AND PROLAPSUS VAGINÆ.

By J. M. WINN, M.D., M.R.C.P.,

SENIOR PHYSICIAN TO THE METROPOLITAN DISPENSARY, &c.

THERE are few medical men engaged in obstetric practice who have not had frequently to deplore the inefficacy of the usual means to give support to the womb in cases of procidentia uteri. Pessaries, by dilating and relaxing the vagina, are worse than useless, and the perineal pad is also open to objection. The latter instrument affords a certain amount of support, but it does not prevent the cervix uteri from protruding beyond the vagina, by which means the mucous membrane of the os uteri becomes chafed and irritated through contact with the tape that passes over the pudendum, and to which the pad is attached. Mr. Baker Brown's plastic operation, when it can be adopted, is unquestionably the most effectual remedy for procidentia uteri: there are, however, many cases where it is not available, and for these I would recommend the double pudendal pad, an appliance capable of giving great support to the uterus, of preventing its protrusion beyond the vagina, and thus adding materially to the comfort and health of the patient.

The nature of this bandage, which Mr. Frederick Walters, of Moorgate-street, constructed at my suggestion, will be readily understood by reference to the subjoined sketch.



The drawing represents a front view of the apparatus, comprising an abdominal belt and a pad attached to it by means of bands, which pass in front of and behind the pelvis. The peculiarity of the bandage consists in its having a double india-rubber pad or compress, which rests on the labia-pudendi. The pressure is thus transferred to these bodies, which become, in fact, the immediate supporters of the uterus. Each compress is about four inches long and half an inch wide, leaving an interstice of about three-eighths of an inch in width, which forms a groove for the escape of the natural or other secretions.

The proportions which I have given above are

the average size, and will be found to suit the majority of cases. It will seldom be necessary for the patient to wear the compress at night, when it can be removed, and thoroughly cleansed with soap and water. When the procidentia is excessive, the india-rubber-air-ball pessary may be used, if necessary, conjointly with the pudendal bandage.

In young females who have not borne many children, and with whom economy is a great object, a simple band around the abdomen may be substituted for the abdominal support or belt. The latter appendage should, however, be always adopted when practicable; and where the abdomen is pendulous, its use is indispensable.

The first case in which I was led to adopt the use of a pudendal bandage was that of a young nulliparous female, aged twenty-three. Her complaint, procidentia uteri, came on six years after the first appearance of the catamenia, but she could not assign any cause for the disease. She worked as a harness-maker, in a sitting position, but her occupation did not require any great amount of muscular exertion. After trying the usual remedies in vain, I determined on applying a pudendal compress, and I was gratified in finding that by this means the uterus could be effectually supported.

A case of prolapsus of the anterior wall of the vagina, combined with procidentia uteri, which came under my care last year, illustrates very forcibly the advantages to be derived from a pudendal bandage. The patient was a married woman, thirty-three years of age, who had borne several children, and was suckling an infant when I first saw her. She suffered greatly from a constant desire to micturate. After wearing the compress for a short time, she called on me, and said, "The bandage is the greatest possible comfort; I could not do without it."

I have only to add, in conclusion, that the result of my experience enables me to confidently recommend the pudendal bandage as a valuable though simple measure, which is calculated to place in comfort a class of patients, who not only neglect themselves, but are frequently neglected by their medical advisers, and condemned to drag on a suffering existence.

Gloucester-place, Portman-square, Aug. 1857.

ON THE TREATMENT OF DISEASE WITHOUT THE USE OF ALCOHOLIC STIMULANTS.

By JOHN HIGGINBOTTOM, Esq., F.R.S., F.R.C.S.,
Nottingham.

VERY early in my practice I discontinued the use of port wine in typhus fever; afterwards, the use of wine and brandy, &c., in English cholera, uterine hæmorrhage, delirium tremens, cases of sinking from various causes, and in some diseases where they were generally used by the profession

I never used them at all. After twenty years of constant and unremitting attention to the effects of alcoholic stimulants in my practice, I discontinued them altogether, both as a medicine and as a beverage. This arose not only from conviction of their inutility, but also from the consciousness of their being very dangerous agents, in no case admissible in acute disease, and also from a belief that chronic disease was much more manageable without them.

Having now discontinued the use of alcoholic stimulants for more than twenty years in my practice, I am induced to bring the facts—the simple facts—before my professional brethren, conscious of the superior efficacy of the treatment of disease without their use, although I believe it to be contrary to the received opinion and practice of the profession, and I know by many it will be considered quite Utopian.

On the Treatment of Typhus Fever without the Use of Port Wine.

I was educated in the opinion that port wine was absolutely necessary in the low and sinking state of typhus fever; and in order to procure it for my poorer class of patients, when I commenced practice, I was desirous of forming a wine dépôt with the assistance of my benevolent friends. Soon afterwards, a singular occurrence happened in a village in Derbyshire. The typhus fever was prevalent, and it was observed that a number of the rich patients died, who had been treated with the artificial stimulus of wine, and that the poorer lived, who had little else but natural stimulants, pure air, pure water, and simple diet. The fact was so apparent, that it was a saying in the village—"The doctors were blamed for killing the rich, and the Almighty was praised for curing the poor." From this simple fact I was induced to try the experiment of treating typhus fever without wine. I had soon a very ample opportunity, for in the month of August, 1813, and the four following months, nearly one half of my time was devoted to visiting patients with typhus fever in the parishes of Radford and Basford—villages extending from one to three miles from Nottingham.

I may observe here, that at that period the practice of medical practitioners contracting for the attendance on parishes was not prevalent, consequently they did not place themselves under the often degrading surveillance of the guardians of the poor.

My treatment of the fever was to secure free ventilation, cleanliness, and particular attention to the digestive organs; commencing with a full emetic dose of ipecacuanha, aperients, saline medicines, and, in the low state, a decoction of the Peruvian bark, (quinine was not then known,) and light, simple, nourishing diet.

After finishing my long attendance with this simple mode of treatment, I had only lost two patients. Both of them had wine given to them,

unknown to me, by a family in the neighbourhood. I believe none of the other patients had any wine; I know they had none from the parochial authorities, and I could not learn that any was obtained from any other source. In one family alone, of the name of Dawson, the father, mother, and seven children were all down of the fever at the same time. A nurse from the workhouse and an orphan girl they kept (who did not take the fever) were their only nurses; no neighbour durst approach them. I have not prescribed or recommended wine in typhus fever since that time, now upwards of forty years, and my treatment has been attended with eminent success.

During the autumn of 1848, typhus fever was prevalent in Carrington, a hamlet near Nottingham. The disease was fatal in some cases. I attended, conjointly with my son, twenty-seven patients at one time; several of them had bad symptoms; great depression, delirium, intermittent pulse, &c. The same early treatment of the disease was pursued in the commencement of the fever as before stated; in the low and sinking state, the sulphate of quinine, with the compound infusion of oranges, was given three times during the day, and the strength sustained by mild nourishment, a little given at very frequent intervals night and day; and the result was most successful—all the patients recovered. I believe the wine treatment would have been fatal to several of them. There is no doubt patients often recover in typhus fever, in spite of the wine given, although, *in my opinion, and from my long practice and observation*, its administration in typhus fever has always been injurious, and often fatal in its effects.

(To be concluded.)

ON A CASE OF OPIUM POISONING.

By K. CORBET, M.D., Surgeon.

THE following case of poisoning is remarkable on account of the large quantity of laudanum swallowed and retained by an infant, on the day of its birth, and its recovery. I was called upon to attend A. M.—in her eighth confinement, on May 3rd, as she required the aid of instruments, and at six A.M. she was safely delivered, by means of the male forceps, of a fine male child, slightly asphyxiated, but recovering after a short treatment, crying lustily, and apparently quite well. After attending to the mother and child, I left them in charge of the midwife previously in attendance, leaving three draughts, each containing thirty minims of tincture of opium, to be given at intervals, as the mother was subject to severe after pains. She took two of those draughts. The child becoming fretful, in consequence of a dose of castor oil that was administered at eight A.M., the midwife, an uneducated person, caused it to swallow the whole of the remaining draught at twelve A.M., as she observed the soothing effect they produced upon the mother. The mother and an aunt saw it given, and said they hoped the mother's dose would do the child no harm:

all of them were ignorant of the composition of the draught.

The effects noticed were: deep, hurried respiration; great lividity of the skin, particularly that of the extremities; closed eyes, contracted pupils; coma; vomiting and convulsions. The convulsive spasms occurred at irregular intervals, when the eyes stared, with twitching and contraction of the muscles of expression; the child did not vomit until a convulsive fit was about to come on. I had no opportunity of testing the matter ejected, as it was cleaned off before my arrival. The bowels were moved repeatedly, probably by the castor oil continuing to act. At five A.M. of the 4th, the fits became less frequent and less severe, and they ceased altogether at nine A.M.; an hour afterwards the child took the breast, and has continued perfectly well and thriving ever since.

Beauly, August, 1857.

ON A CASE OF COMPOUND FRACTURE OF THE SKULL, WITH DEPRESSION.

RECOVERY WITHOUT ELEVATION OF THE BONE.

By GEORGE BROWNING, Esq., M.R.C.S., L.S.A.,
Oughtibridge.

A. J.—, aged four years, while playing by the side of the river Don, fell a distance of ten feet into the bed of the river, alighting with his head on a piece of rock, the consequence of which was a compound fracture of the left parietal bone, beginning an inch and a half in front of the posterior superior angle, and running in a direction downwards and backwards to the extent of half an inch. When I first saw the little fellow, two hours after the accident, there were no symptoms of compression of the brain; but there was a wound of the scalp an inch long in the site mentioned, fracture of the bone beneath, with palpable and considerable depression, the sharp edge of the sound bone being distinctly perceptible to the touch. His skin was hot, and pulse slightly accelerated in frequency. Ordered water dressing to the wound; to take four grains of chloride of mercury immediately, and half an ounce of febrifuge mixture every four hours.

On the next day (August 31st, 1856) there were no symptoms of compression; wound healthy; febrile excitement abated; and by the 9th of September the scalp wound was healed, and I found him running about again perfectly recovered, without having suffered from a single head symptom.

Remarks.—I consider there are two points worthy of notice in the above case. First, the total absence of every symptom of compression of the brain, with the presence of such evident depression of the bone. Secondly, the success attendant upon the treatment, which differed from that usually recommended, in dispensing with the use of the elevator until symptoms of depression shall call for it.

Sheffield, 1857.

WHAT HAS PATHOLOGICAL ANATOMY DONE FOR MEDICINE AND SURGERY?

By F. J. GANT, Esq., M.R.O.S. Eng.

ASSISTANT-SURGEON TO THE ROYAL FREE HOSPITAL,
LATE SURGEON (STAFF) TO HER MAJESTY'S MILITARY HOSPITALS, CRIMEA AND SCUTARI.

PATHOLOGY: ITS NATURE AND RELATIONS.

THE relation of pathology to therapeutics is obviously a question of deep practical interest. To know what aid we may or may not expect from that science, must determine not only how far we may trust its principle to direct our treatment of disease, but will also indirectly elucidate the true nature of therapeutics. Apart from its relation to therapeutics, the pursuit of pathology offers few, if any, extrinsic qualities of interest. Compared with other natural sciences, to which we shall presently discover its alliance, pathology possesses not the beauty of botany; its truths are not so marvellous as those of chemistry; it lacks the grandeur and poetry of geology, and does not come home to us apparently with the everyday utility of mechanical science. By the side of anatomy and physiology, we can scarcely concede to pathology that perfection of construction and adaptation of means to ends, which invest with wonder the study of the sister sciences. On the contrary, pathology might be called the science of disorganization; for it traces the destructive changes and their results which organized forms undergo; it is familiar with all that is most distressing during life, from the dawn of existence, through childhood, adolescence, and decrepitude, and with all that is most revolting after death. It remains, therefore, to be seen how far pathology can aid the removal of human suffering more especially, and assist the restoration of health. I need not, therefore, offer any apology for inviting the attention of the profession to this question, by whom, I trust, my reflections will be received with the consideration due, not to their merits, but to an investigation at once so important, difficult, and original.

I would first briefly examine the nature and object of pathology. What may that term express? When we clearly understand the limits of this science, then and then only are we in a position to determine its true relation to therapeutics. Now, the word pathology no doubt signifies the Science of Disease. But what is disease? By reference to anatomy and physiology as the opposed standard of health, *disease may be regarded as either an altered proportion or condition of the various structures of organized beings, or of their functions.* We cannot restrict pathology to the diseases of the human species alone. There are, then, two primary forms of disease—*structural and functional.* Now, pathology embraces both; but structural disease is more commonly regarded as synonymous with pathological anatomy, while pathology proper is thus limited to diseased alter-

tations of function. These terms are therefore the analogues of anatomy and physiology. By virtue of this relationship we perceive that pathology includes two primary elements, the *statical* and *dynamical*, as they may be called, or the conditions of rest and motion. In this respect pathology resembles the constitution of other physical sciences. Nor is this resemblance unaccountable. For the very nature and utmost limits of every inquiry must be controlled by the laws of the human mind. These laws at once regulate the character and define the boundaries of human knowledge. Mind and matter must thus alike be investigated: and each physical science can therefore only reflect the operations of the mind itself; although, when applied to matter, they are necessarily modified by an association with the idea of space. These remarks are therefore not vague and transcendental, but eminently practical, for they directly elucidate the *necessary identity* of all physical science, pathology of course included. I do not pretend to trace the exact correspondence of each physical science to certain mental processes, for the precise delineations of individual departments of knowledge are themselves somewhat conventional; but we may thus foretell their nature and circumscribe their limits.

If, then, guided by these reflections, we view the sciences of matter, we at once discover a remarkable, but not unaccountable analogy. If, thus, we look to natural philosophy (in the restricted sense of the expression), we may reduce the general phenomena of matter to those of its statical and dynamical conditions. These states of rest and motion imply either the fixed, or the changeable relative position of bodies (or of their particles) to each other. Nor do the subordinate forms of solid, fluid, and gaseous matter in any way compromise these distinctions; and thus we trace the origin of statics and dynamics, hydrostatics and hydraulics, and of pneumatics, which comprises both phases of aeriform matter. The more recondite phenomena of sound, heat, light, electricity, and magnetism, may also, perhaps, be referred to analogous elementary conditions, to the states of rest or motion of ultimate atoms, and, therefore, to their fixed or changeable relative position. Passing on to chemistry, we cannot fail to recognise in the twofold states of composition and decomposition, those aspects of matter which respond respectively to its statical and dynamical conditions. The former implies the stationary combinations of atoms; the latter, their transpositions.

If next we inspect the departments of anatomy, whether descriptive or minute, and of physiology, we perceive their compliance likewise with the laws of relationship we are now inducing. Thus the statical element may be recognised in the mechanism and chemical composition of organized beings; with also a new feature of its manifestation peculiar to organization—namely, the anatomical character of definite relative position. In other words, the science of anatomy, however subdivided, essentially embraces not only that of

mechanics and of chemistry, but also a *new* aspect of the statical principle peculiar to itself—namely, the definite arrangement of solid with fluid, and, perchance, gaseous matter.

Again, the sister science, physiology, conveys essentially the idea of change. This idea prevails throughout the various functions of circulation, respiration, digestion, secretion, nutrition, reproduction, and the functions of the nervous system. Now, the series of changes peculiar to each of these compound processes may alike be reduced to certain elements—viz., the phenomena of motion and of decomposition; by virtue of which physiology (with anatomy) is allied respectively to mechanics and chemistry; while certain changes of secretion, (nutritive and excretive,) with the phenomena of muscular contractility and of the nervous system, being peculiar to living beings, may be termed *vital*, and impart to physiology a character also peculiar to itself. By parity of reasoning, the attributes of vital properties and of definite positional arrangement of parts, being ideas peculiar to anatomy and physiology, together distinguish these sciences from those pertaining to unorganized matter.

Lastly, the general nature of pathology may be inferred from its relations to the foregoing departments of physis. For the *altered* proportion or condition of the various structures and functions (when contrasted with anatomy and physiology) implies also an *analogous* (though altered) combination of the mechanical and chemical elements, conjoined either with the anatomical or with the physiological—i. e., with the definite positional arrangement of matter, or with its vital properties. Thence are evolved respectively *pathological* anatomy and pathology. It must therefore be obvious that these sciences cannot be restricted to diseases of the human species, but that (being co-extensive with anatomy and physiology) they must include also those of *animals and plants*. We are already somewhat acquainted with vegetable pathology, and I need only mention the ravages of the potato disease during the last few years to establish the claims of this inquiry to further attention. Comparative pathology embraces more especially the diseases of animals, and their comparison with those of our species. This also is an inquiry only just dawning on the horizon of knowledge, and one which has not yet assumed the definite position of science. Indeed, when we analyze the nature and pursue the relations of pathology to collateral departments of physics, we at once perceive that its more recent origin must be due to the unavoidable precedence of those sciences (mechanics and chemistry) from which pathology has partially been derived.

While, however, we thus recognise the relation of this science to anatomy and physiology, we may also discern a tolerably well-defined line of demarcation between them: for, as the conditions of health may be modified either in *degree* or still more so in *kind*, so such alterations are the *essential peculiarities* of pathology, and represent the elements of disease, whether structural (statical)

or functional (dynamical). True it is that disease cannot be exactly defined by contrast with anatomy and physiology, for structures and functions themselves vary within the limits of their healthy conditions. Perhaps no two individuals are precisely alike structurally or functionally, not to mention the modifying circumstances of age, sex, &c. Disease must, therefore, be defined by comparison with the healthy condition of the individual, or at least with due allowances for individual differences. When we seek further to analyze the nature of disease, our progress is impeded by the almost inseparable union of structural and functional conditions. Both forms of disease are commonly associated. That the former produces the latter is well known, and it is yet doubtful whether functional alterations can occur apart from previous structural disease, although perhaps only in an early and imperfectly developed stage. It would therefore appear that disease is essentially and *primarily* either an altered proportion or condition of the various *structures* of organized beings, human or otherwise.

Now, the aim of these papers will be to develop more especially the *relation of human pathological anatomy to therapeutics*. With this view, we must further analyze diseases of structure. These may represent *proportional alterations of the several solids*—tissues and organs—and of the *fluids*, whether organized—blood, chyle, and lymph, or unorganized secretions, including *gases*. The alterations referred to may affect either the individual physical characters of situation, number, position, configuration, colour, consistence, elasticity, size, weight, and chemical constituents individually or collectively, or, lastly, texture and structural elements. Now, it is obvious that some such changes cannot extend to secretions being *unorganized*, and moreover, their condition being *fluid*, they admit only of *certain* physical alterations with those of their chemical constituents. Again, the *organized* fluids, blood, chyle, and lymph, admit also of *structural* alterations; while the *solid* tissues and organs may present departures from their healthy conditions in each or *every* mode of deviation. Such, then, are the *elements of structural disease* as reflected by anatomy. Generally speaking, these elementary forms of disease do not occur singly; they co-exist. If, for instance, the heart undergoes fatty degeneration, that structural change is combined with an obvious modification of its chemical composition, and of its physical characters, as of colour, consistence, weight, situation of impulse and corresponding relations of the heart to the thoracic parietes.

The foregoing structural alterations are those of *DEGREE* (proportion). Thus, alterations of situation, number, position, configuration, consistence, colour, elasticity, size, weight, &c., are referable to certain proportional deviations from normal conditions. Alterations of *situation* are frequently seen in the shifting of loose and perchance *weighty* internal organs. The simpler movements from their usual level are witnessed in elevation of the heart from pressure below, and in the natural

rising of the gravid uterus; while the descent of such organs is also shown by prolapsus (not inversion) of the uterus. Again: the contents of cavities. Thus the cerebro-spinal, thoracic, and abdominal organs may escape through wounds as protrusions; while the same viscera more readily find their way as herniæ through natural openings in the walls of these cavities, and are then covered by those integuments which have successively impeded their progress. Protrusions and herniæ of the brain, lungs, kidneys, liver, spleen, stomach, intestines, omentum, bladder, uterus, and ovaries, are thus known to pathologists. But displacements are not confined to loosely connected and pendulous internal organs. The different portions of the osseous system, although more firmly held together by ligaments, are liable to transpositions. Some bones, however, are more prone than others to such casualties, and the circumstance of loose ligamentous union, coupled with laxity of articulation from disease, will chiefly favour the occurrence of dislocations. The varieties of congenital, complete and incomplete, simple and compound, are subordinate conditions. Of alterations affecting the situation of fluids, I may mention hæmorrhage and extravasation of fluids (as urine) from those cavities which normally contain them. Alterations of *number* may be illustrated by double organs: the congenital absence of one kidney, for instance, or the supplementary addition of one or more mammae. Changes of *position* are favoured by the same anatomical, or rather perhaps mechanical, circumstances which predispose to those of situation. Both are chiefly found amongst pendulous internal organs. The gravid uterus may fall forward (anteversion), backward (retroversion), or to one side (lateroversion); so also the heart—its apex more especially is easily displaced. By *configuration*, I mean form depending on the relationship of distinct parts. Proportional alterations in this respect may evidently be either congenital malformations or acquired deformities. *Internal* sacculations of hollow organs are seen in the pharynx, stomach and intestines, bladder and uterus. Inflexions of their cavities are represented by inversions of the uterus, vagina, and intestines (invagination). *External* alterations of contour are recognised in flexions of the uterus and spinal curvature; while the general expansion of large cavities from hydrocephalus or pleuritic effusion, their equally general retraction occasionally, with the local bulging or depression of the thorax, respectively from emphysema and tuberculosis, further exemplify alterations of configuration. So, also, do solutions of continuity, whether congenital or acquired. Such are fractures and wounds. The former term is restricted to sudden and mechanical divisions of bone; the latter to those of the soft parts. Many varieties of either lesion are of practical interest. Thus, the simple fracture is limited to either the incomplete or complete division of bone; and this, again, may be transverse, oblique, longitudinal, comminuted, or depressed. The compound fracture involves also a wound of the soft parts, either

by protrusion of the bone itself, or by an external wound extending thereto. A complicated fracture implies the extension of injury to surrounding parts, as to the cerebro-spinal axis, or to the contents of the thoracic or abdominal cavities. Thus the lungs, and even heart, may be torn by fracture of the ribs; the bladder is frequently ruptured by fracture of the pelvis; while large vessels and nerves of the extremities may likewise share the injury of adjacent bones. Wounds (of soft parts) also admit of many important distinctions. Contrast the simple division of tissues by an incised wound with the bruise of a punctured, or, still more so, of a contused wound, and the *local* effects of such injuries with the *general* consequences of poisoned wounds. The clean division of tissues by simple incision is the wound of many surgical operations; and although a necessary evil, yet its consequences must be far less serious than those of other wounds. The physical properties of *colour, consistence, elasticity, size, weight, &c.*, may respectively be increased or diminished. These again are proportional alterations. Some such changes are expressed by the appropriate terms of induration or softening, rarefaction and condensation, hypertrophy and atrophy; the latter imply essentially an alteration of weight or quantity of matter; while rarefaction and condensation express merely the enlargement or diminution of size (or volume). Such are the expansions of an emphysematous lung, or the condensation of this organ. Alteration of size may affect only the capacity of hollow organs; and the diminution or constriction of canals, as the œsophagus, rectum, and urethra, are illustrated by the varieties of stricture. On the other hand, enlargement of cavities may occur. The varieties of true aneurism and of varicose veins are referable to this head. Passing on from physical alterations, we find the chemical constituents of solids and fluids undergoing similar simple variations of excess and deficiency; while their special structure being retained, that structure may likewise exhibit modifications of quantity. These, however, are adequately represented by those of weight and volume combined: such are hypertrophy and atrophy, plethora and anæmia, either of which may be general or local; the latter variety of plethora including the conditions of congestion, determination, and inflammation.

Now, all the foregoing alterations agree in one particular: they are departures, it is true, from healthy anatomical conditions, but merely as deviations of *degree*, and they imply, therefore, the identity of the normal materials from which those deviations have occurred. I use the expression "*normal materials*" to include the unorganised fluids (secretions) as well as those possessing structure, together with solid tissues and organs. So far pathological anatomy is the counterpart of anatomy, and its elements are therefore referable to mere proportional alterations of anatomical conditions. But the disclosures of pathological anatomy are not limited to such simple forms of disease; they comprise also the substitution for, or addition to, the normal material of *new* (*adven-*

titious) products and the introduction of foreign bodies. The series of products already known to pathologists present a gradual transition from the simpler varieties to those which are farthest removed from the normal conditions of structure. Various classifications have been proposed, each perhaps offering certain advantages. Adventitious products possess individual properties, composition, and perchance structure, and therefore, like other natural objects, they admit of arrangement through their resemblances and differences in any of these particulars. The classification proposed by Müller, of gelatinous, fatty, and protein growths, is founded on chemical considerations. I would select for my present purpose the characters, with certain vital endowments, of structure, as, together, the bond of alliance; and guided by this relationship, we find new products are variously allied to healthy conditions. Their primary division into plastic and aplastic, points to the parallel distinction of the normal material into that possessing the definite arrangement of solids (and fluids) called organization, and unorganized fluids, or secretions.

Aplastic or Unorganized Products thus negatively distinguished may be first noticed. These are new chemical compounds, both saline and organic, which do not enter into the normal composition of those solids and fluids in which they are found. Their physical state varies, being frequently solid, occasionally fluid, rarely gaseous. They are formed generally in diseased secretions from free surfaces, in those of mucous membranes more especially, but in those also from serous and synovial membranes, and from the skin. Their most characteristic forms are represented by calculi and concretions, the latter being distinguished by their possessing, not a distinct structure, but an organic basis with which the new compounds are intermixed. This peculiarity, therefore, supplies the link between plastic and aplastic products. Of calculi are found, the lithic acid, lithate of ammonia, oxalate of lime, ammonio-phosphate of magnesia, phosphates and carbonates of lime, and cystic-oxide varieties, &c. Concretions may be illustrated by certain bodies, free, or attached within arteries and veins.

The division, Plastic Products, strictly speaking derive their origin from either the quiet transudation or supplemental overflow of blastema, which may itself be regarded as modified liquor sanguinis. This nutritive material subsequently undergoes various plastic changes, which terminate in equally various forms of structure. Hence all such products are plastic or organized, but the *KIND* of their *adult organization varies*, so also does its *mode of reproduction*. Structurally speaking, they present an approach to the following gradation of affinities to healthy tissues; while, in respect of their vital endowments, some are *directly* reproduced from *blastema*; others *reproduce themselves*, provided the parent organism is duly supplied with blastema. Agreeably to this twofold distinction, we find—1st. Pseudo tissues, so named from their *imperfect structural resemblance*

to healthy tissue. Such are tissues which replace (or substitute) those that have been mechanically destroyed, as by wound or fracture. Fibro-cellular tissue, having nearly its ordinary structure, is that which is first evolved from reparative blastema. This texture supplies the basis of union where parts have been divided, and may therefore be called *connective tissue*. Here, however, the process of development may terminate, or it may afterwards be fashioned off so as to imperfectly resemble the particular tissue, whether bone, tendon, skin, mucous membrane, &c., of which it forms the bond of union. 2ndly. Deposits result from the *supplemental* overflow of nutritive material, which is deposited in various situations. This then undergoes more or less organization, and hence the products of pus and tubercle. But both deposits and pseudo-tissues agree in their mode of reproduction (no less than of production) *directly* from blastema. 3rdly. Growths also result from the *supplemental* overflow of a nutritive material, which, however, then assumes higher forms of organization, and such products are therefore further removed from normal conditions of structure. Growths, moreover, possess the power of *directly reproducing* their own structural elements when adequately supplied with blastema. But their vital changes contrast remarkably. Some appear of mere local (or mechanical) importance; while others gradually pervade the neighbourhood of their residence, and eventually contaminate distant parts. The latter may, therefore, be termed *infiltrating* growths; while the former, being distinguished by the negation of this attribute, are *non-infiltrating* growths. Such are—1st. Cystic tumours of various kinds, the serous, sanguineous, and atheromatous cysts; or compound—i. e., cysts enclosing others. 2ndly. Fatty tumours. 3rdly. Fibrous tumours, including the recurring fibroid and fibro-nucleated varieties. 4thly. Cartilaginous tumours (enchondroma), with the recurring and myeloid forms, osteo-sarcoma, &c. Infiltrating growths comprise perhaps only one genus, cancer and its varieties, encephaloid, scirrhus, colloid, &c.

The class of Degenerations represent those retrogressions by relapse of structure which not only normal structures may undergo, but also pseudo-tissues, deposits, and growths. I therefore mention them, in conclusion, as finding no place in the foregoing series. Degenerations exhibit distinctive physical and chemical characters, and may be fibrous, granular, fatty, or calcareous. Of these, Dr. C. J. B. Williams observes, "All present features of deterioration or degradation in the scale of organization, as is implied in the term degeneration, and this degradation takes place in the order in which the four several forms are arranged above. In chemical composition, and, in a fainter degree, in physical conditions, the series analogically presents a successive descent from animal, through vegetable, to mineral composition." Our second division of adventitiousness is that of Foreign Bodies. These, although not products, but *introduced* from without, are never-

theless adventitious to the mechanism in which they are found. Such are—1. Parasites, either animal (entozoa and epizoa) or vegetable (entophytes and epiphytes); 2. Inanimate foreign bodies, very frequent, various, and important to the surgeon.

It is unnecessary for me to enter into further detail, my present intention being only to briefly review the nature and objects of pathological anatomy, in order that I may subsequently trace its relation to therapeutics.

The following analytical arrangement of structural disease will more clearly illustrate the subject of this paper:—

Organized Solids and Fluids and Unorganized Fluids may present severally one or more

ALTERATIONS OF DEGREE, (Proportion,) either
Physical of

Situation—Elevation or prolapsus.

Solid—Protrusions and herniæ.

Dislocations.

Fluid—Hæmorrhage, extravasations.

Number—(*Ex.* Of double organs.)

Position—(*Ex.* Versions. Uterus.)

Configuration—*Internal* parietes of cavities.

Sacculations of hollow organs.

Infections of hollow organs.

External alterations of contour.

Flexions. (*Ex.* Spinal curvature.)

Expansions and bulging of cavities.

Retraction and depression of cavities.

Solutions of continuity.

Fractures, wounds.

Colour

Consistence—Induration, softening.

Elasticity

Size —Increased, diminished.

Volume —Rarefaction, condensation.

Capacity —Aneurism (true), stricture of canals.

Varicose veins.

Weight—Hypertrophy, Atrophy.

Chemical constituents increased or diminished Individually.

Collectively.

Structure—Solids—(Hypertrophy, Atrophy).

Fluids—Blood, Anemia, Plethora.

Congestion.

Determination.

Inflammation.

ALTERATIONS OF KIND (Condition)—

Products—

Aplastic (Unorganized)—Calculi, concretions.

Plastic (Organized)—

Blastemal—Pseudo-tissues. (*Ex.* Connective tissue.)

Deposits. (*Ex.* Pus Tubercle.)

Germinal—Growths.

Non-infiltrating Cystic tumours
Simple.

Serous Sanguineous.

Atheromatous.

Compound cysts.

Fatty tumours.

Fibrous tumours.

Fibro-nucleated.

Recurring fibroid.

Cartilaginous (Enchondroma).

Recurring variety.

Myeloid variety.

Infiltrating growths—

Encephaloid, scirrhus, colloid.

Degenerations—Fibrous, granular, fatty, calcareous.

Foreign Bodies—

Inanimate.

Animate Parasites. { Entozoa, epizoa.
Entophytes, epiphytes.

THE DIAGNOSTIC VALUE OF STRUCTURAL CONDITIONS ALONE, EXEMPLIFIED BY CANCER AND CANCROID GROWTHS.

THE LAW OF STRUCTURAL RETROGRESSION INDICATED.

THE Relation of Pathological Anatomy to Therapeutics must obviously be affected by the actual condition of that science. I propose, therefore, to illustrate certain general defects in our present knowledge of pathological anatomy, which must, at least for a time, both limit and qualify the fulfilment of the relationship in question. I do not allude to the circumstance that *some* diseases may, perchance, have hitherto altogether escaped detection, but to defects in our knowledge of those with which we are more or less acquainted.

Thus, respecting either the *Physical Properties*, the *Chemical Constituents*, or the *Structure* of diseased normal tissues and of new products, we do not know, in certain instances, what peculiarities these pathological elements may severally present. Given, any one such element, could we always predicate the remaining two?—or given any two, could we determine the third? Again, if these conditions are known, then, in certain instances, we do not know whether they *co-exist* in any special and invariable combination. Their mutual relation is unknown. For example, are the varieties of cancer characterized by any such fixed and invariable *co-existing* peculiarities?

The following three pairs of converse propositions, and their respective exemplifications, will further demonstrate this position. I may observe that the examples in question are selected from every gradation of structural disease, but certain sections of pathology more than others exemplify the deficiencies referred to. For the sake of accuracy, although perhaps at the risk of proving tedious, I shall adhere to the same formula of expression for each proposition.

PROP. 1.—What peculiarities of *minute structure* co-exist with known conditions of chemical composition and of physical properties *combined*?

Query. Carcinoma varieties of scirrhus, encephaloid, and colloid.

PROP. 2, (Conversely.)—What peculiarities of *chemical composition* and of *physical properties combined* co-exist with known conditions of minute structure?

Query. Quasi-malignant varieties of non-malignant growths; recurring fibroid and fibro-nucleated tumours; recurring cartilaginous and myeloid tumours.

PROP. 3.—What peculiarities of *chemical composition* co-exist with known conditions of minute structure, and of *physical properties combined*?

Query. Certain varieties of lymph, as the enplastic, cacoplastic, and aplastic; also, certain blood diseases, as scurvy.

PROP. 4, (Conversely.)—What peculiarities of *minute structure* and of *physical properties combined* co-exist with known conditions of chemical composition?

Query. Certain blood diseases, as cholera.

PROP. 5.—What peculiarities of *physical properties* co-exist with known conditions of minute structure and of chemical composition combined?

Query. Quasi-malignant varieties of non-malignant growths.

PROP. 6, (Conversely.)—What peculiarities of *minute structure* and of *chemical composition combined* co-exist with known conditions of physical properties?

Query. Certain degenerations.

These deficiencies must necessarily affect the present application of Pathological Anatomy to Therapeutics. The diagnostic value of structural characters when taken alone is implied in the 1st Proposition. What peculiarities of *minute structure* co-exist with known conditions of chemical composition and of physical properties combined? When we review the progress of pathological anatomy since the more general use of the microscope, we might be at a loss to select one new product whose minute structure is altogether unknown, or even still doubtful. But this is not the only feature of the question at issue. It is also this: Have we in all instances so exactly associated certain known structural conditions with known physico-chemical characters peculiar thereto; that all such *co-existing* conditions enable us invariably to identify the kind of morbid product or tissue. Keeping this requirement in view, if we regard merely the structural relations of plastic morbid products, we can trace an intimate resemblance throughout the series.

All such products may be reduced to similar constructive elements—*granular matter, cell, and fibre*, either free or imbedded in a stroma of filamentous tissue variously disposed. By individual peculiarities of these pathological elements we may distinguish the various forms of product, pseudo tissues, deposits and growths. So also their physical characters, and, perchance, chemical composition may have been determined. It is not, however, by the independent knowledge of structural affinities, or of physico-chemical characters, but by the *concurrence* of all such signs, that we are enabled to recognise any morbid condition; and if one such character is either absent

or imperfect, then we may raise the question whether any invariable combination do exist, and if so, what association?

These remarks apply more appropriately to certain morbid products of *variable structure*, but whose types are well defined; such are cancer growths. These share in common with other plastic products the elementary granule; cell, and fibre; but it is not by tracing through and through the modifications of these elements peculiar to each variety of cancer, nor yet by confining our attention exclusively to the mere physico-chemical characters which accompany them, that we can venture to identify each of the many deviations from the well-pronounced and typical forms of cancer. Thus, encephaloid, scirrhus, and colloid all present the same cell. This, at first colourless, pellucid, and consisting of a delicate envelope, encloses a large clear nucleus or two, with one or two nucleoli, also large and clear; perhaps, also, sub-cells, the shape of which may be caudate, fusiform, &c., from outgrowths in one or more directions. So, also, these cells are alike imbedded in a filamentous stroma of variable locular arrangement and density. With these elements is associated another inter-cellular substance, gelatinous, translucent, and amber-coloured.

As the proportion of cells, or inter-cellular substance of either kind, respectively prevail, so do we recognise encephaloid abounding with cells, soft, opaque, and of a dead white colour, or tinted from hæmorrhage; scirrhus—fibrous, hard, semi-transparent, of a bluish-white or fawn colour; and colloid—gelatinous, transparent, and yellowish-green.

These varieties are further allied by possessing the same chemical basis: albumen associated with fibrin, gelatine, osmazone, fat, salts, as the phosphates and carbonates of lime, the carbonates of soda and magnesia, oxide of iron, and water.

Now, do the same conditions of structure invariably *co-exist* with these physico-chemical characters? This question bears directly on the diagnosis and therapeutical treatment of cancer. For the pathological tendencies of scirrhus, encephaloid and colloid are of variable significance. The former two are more prone to recurrence; the latter less so, and comparatively of local importance.

Can we, then, determine our diagnosis of each variety by an appeal to any structural characters which may be revealed, either through an examination of fluid exuded from cancer during life, or on a more complete examination of the growth when removed by operation? I think not. No sufficiently exact structural differences have as yet been detected, and we can, therefore, rely only at present on the physical characters of cancer to decide the question at issue. By this conclusion I mean, of course, only to contrast the comparative value of structural characters; for many other circumstances associated with the seat of cancer—its course and duration—its influences on surrounding and distant parts—the gene-

ral symptoms of cachexia, and the conditions of age, sex, with previous diseases of the individual, and hereditary taint, will combine to regulate our diagnosis. But respecting the value of anatomical characters alone, Vogel truly remarks, "The anatomical and histological relations of carcinomatous tumours exhibit the greatest variety; indeed, even in the same tumour different parts often present very different characters, and which also vary with their stage of development." We might, perhaps, press the question further, and doubt the structural individuality of cancer as a special kind of growth distinct from all others. Opinions are pretty evenly divided respecting any supposed specific characters of the cancer-cells. MM. Lebert and Robin decide affirmatively; while MM. Vogel and Virchow deny the supposition; Forster even maintains that such cells are met with of the same size and shape as often in healthy as in diseased tissues; and Dr. Hughes Bennett thus concludes a most careful examination of scirrhus mamma: "The result of the examination was, that it was composed of a fibrous matrix, arranged so as to form numerous minute cysts, within which, as well as between, the meshes formed by the fibrous tissue, numerous nucleated cells had developed themselves. Many of these cells were characterized by the presence of a double or divided nucleus within which might be observed a double or divided nucleolus. These structures I shall, in future, denominate *cancer-cells*."* Again, p. 170: "The numerous observations I have made oblige me to differ from this excellent observer (Lebert), and rather to agree with Müller in thinking that no single element is diagnostic. When, on the other hand, corpuscles, such as I have previously described under the name of cancer-cells, are infiltrated amongst the meshes of a fibrous structure in the same manner that pus-cells are infiltrated in a pneumonic lung, when such infiltration is not directly connected with a mucous or epidermic surface, and nowhere surrounded by a hyaline or fibro-hyaline substance, then we may conclude with tolerable certainty that the structure is cancerous. Dr. Walshe has called cancer an infiltrating growth; and his idea appears to me to have approached nearer the truth than that expressed by any previous writer."

Dr. Hughes Bennett, therefore denies any specific characters of the cancer cell, while he certainly maintains the structural individuality of cancer itself as a special kind of growth, recognisable by a *peculiar association* of structural elements not themselves specific. Respecting even this view, Mr. Paget asks,† "Are there any cancers which are not formed of structures such as these? (i. e. cancer-cells and free nuclei.) The answer must be affirmative; for there are rare tumours which present the whole clinical history of cancer, and which should therefore be called by the same name, though they have not these

peculiar cancer structures, or have them in very subordinate quantity. I do not refer here to cancers of which all the structures are imperfect, or degenerate, or diseased, but to such as the fibrous cancers, the osteoid, and certain varieties of the medullary. These all deviate from the assumed specific cancer structures: and two of these, the *fibrous* and *osteoid*, approximate to the characters of *natural tissues*." The italics are my own.

With these remarks I leave this question, only observing that the supposed identity of the structural elements of cancer with those of other growths would necessarily invalidate their diagnosis when guided by the ambiguous evidence of anatomical characters alone. On the other hand, if the structural elements of cancer can be distinguished from those of other growths, yet this admission does not verify the questionable nature of such evidence in determining the mere varieties of cancer. If, then, the individuality of certain varieties of growth, when distinguished only by their structural elements, is thus so uncertain, we may inquire,—What peculiar *physico-chemical* characters together co-exist with known conditions of minute structure? Now, this question does not necessarily imply the uniformity of structural characters themselves, but only their *ascertained* peculiarities in certain instances; and we ask what physico-chemical conditions accompany them? Here, again, we may refer to certain quasi-malignant (cancroid) varieties of growth, whose typical condition, however, is undoubtedly non-malignant. Such are the fibro-nucleated (Dr. Hughes Bennett) and recurring fibroid (Paget) varieties of fibrous tumour. The structural affinities of these growths will at once be apparent from the following tabular view of their essential elements:

Fibrous tumour	—Fibres, white } Ditto, elastic }	With nuclei.
Fibro-nucleated	—Fibres, white, With oval nuclei.	
Recurring fibroid	—Fibre-cells, i. e., elongate and caudate cells. Nuclei.	

Now the chemical relation of these growths has been but roughly ascertained. All yield gelatine on boiling, but what are their other constituents? Again, what are their physical characters? The typical form of fibrous tumour is very hard, elastic, and mostly of a greyish colour on section, interlaced with white opaque bands variously arranged. Its minute structure is that of ordinary fibrous tissue. On the other hand, fibro-nucleated tumours represent only a rudimentary structural condition of fibrous tissue,—viz., fine filaments infiltrated with many well-marked oval nuclei; whilst their physical characters very much resemble those of ordinary fibrous tumours. These two conditions of structure cannot therefore be distinguished by any external visible characters. Yet their diagnosis is of great surgical importance; for the fibro-nucleated variety is very prone to recur again and again when removed, and we may perhaps be

* Cancer and Cancroid Growths.
† Surgical Pathology, vol. II. p. 568.

unable to determine our diagnosis until after an operation, which may only induce the speedy return of a growth we had thus hoped to have effectually extirpated. So also, the recurring fibroid variety affords an equally appropriate illustration of this position. Mr. Paget mentions one such tumour, situated over the upper and outer part of the leg, close to the tibia. Its size was that of a filbert, and it was considered fibrous when first removed in 1846. Some months after, another, as large as a walnut and decidedly fibrous, was removed from the same spot. In October, 1847, a third tumour, the size of a patella, was again removed. This was so like a fibrous tumour that, without the microscope, Mr. Paget would certainly have so regarded it. Yet it consisted of nucleated fibre-cells—i. e., nucleated cells elongated into either caudate or spindle shape—and free nuclei; but very little filamentous tissue. Here, then, we observe cells developing into fibres; in fact, another rudimentary condition of fibrous tissue. A fifth tumour returned in the same locality, and possessed the same fibrous appearance and the same minute texture as the preceding, when removed (June, 1848). Lastly, some months after, there reappeared, also in the same locality, a large, soft, bleeding protrusion, which, after a fatal amputation of the limb (Nov. 1850), was found to have a milk-white colour, except where tinged with effused blood, and of which the exposed parts were soft, pulpy, and grumous. Mr. Paget adds: "One would certainly, judging by its general aspects, have called this a brain-like medullary cancer; and yet it had essentially the same microscopic characters as the tumour I first examined from the same patient, only the narrow, elongated, caudate cells were very generally filled with minute shining molecules, as if from fatty degeneration connected with the protrusion, and partial sloughing of the mass."** Similar cases are cited by Mr. Paget as having come under the notice of himself and other observers.

Here, then, are tumours, the fibrous and recurring fibroid in its first stage, possessing the *same* physical characters, but conjoined with different structure; and, conversely, fibroid tumours, in their first and second stages respectively, presenting *dissimilar* external characters, yet associated with the same essential structure.

The progress of tumours, thus contrasted, is, however, of widely different therapeutical significance. Indeed, they differ more in this respect than the varieties of cancer, all of which vary only in the *degree* of their local and general influence. Recurring fibroid, unlike ordinary fibrous tumours, not only return (as their name implies) after complete removal, and in this particular resemble cancer-growths, but they also recur at shorter intervals after each operation, and successively attain more speedily a larger size, and destroy surrounding tissues. The diagnosis of such tumours is obviously, therefore, a question of

the highest therapeutical interest, but one not apparently to be decided by the knowledge of physical characters alone. I am of course aware that our diagnosis may be guided by the circumstances of local recurrence in the case of a second, third, or fourth tumour re-appearing in the same situation; but the question is, the primary diagnosis of recurring fibroid and ordinary fibrous growths—tumours which so closely resemble each other, except in minute structure and pathological tendencies. Can we, by an examination of their consistence, elasticity, size, shape, and situation, before an operation, determine thereby their liability to return, &c., if completely extirpated? I think not. If, then, we must rely on structural characters for our diagnosis of certain growths, while in other instances, as cancer, we cannot depend on the *uniform co-existence* of structural conditions with known physico-chemical characters, it becomes a question of the deepest interest whether the *variable co-existence* of such conditions can be referred to any law of structural development. If so, these discrepancies may perchance be reconciled, and the diagnostic value of anatomical evidence more fully confirmed.

Now, we have already seen that the structural peculiarities of fibro-nucleated and recurring fibroid tumours merely represent rudimentary (or developmental) stages of ordinary fibrous tumours; and if we further compare the latter with developmental conditions of healthy fibrous tissue, we readily perceive a certain resemblance between the *permanent* structure of fibrous tumours and the *transitory* conditions of their analogous healthy tissue. Thus, the essential element of fibrous tumours is the white fibre of cellular tissue, intermixed with elastic fibres and free cytoblasts, or with other tissues similar to those in which these tumours may have originated. Now although certain portions of such growths may consist of white fibres, fully developed, giving thereby the appearance of perfect fibrous tissue, yet in other portions these fibres are more or less *rudimentary*, and the fibrous appearance is therefore less characteristic.

It would, then, appear that fibrous tumours, no less than its fibro-nucleated and recurring fibroid varieties, may be regarded as so many structural *retrogressions* of healthy fibrous tissue, resulting from *arrests* of its developmental conditions. I might venture to extend this generalization to the various deviations of other growths from their typical forms of structure. Observe cartilaginous tumours (enchondromata) and their myeloid variety. An ordinary cartilaginous tumour presents the appearance, chemical composition, and structure of foetal cartilage. Its substance is pulpy or more consistent, even hard, elastic, yet crisp, bluish-white, and translucent. These appearances, however, must vary with modifications of structure. Two elements are found—cells, and intercellular substance, the latter semi-transparent, or molecular and dim, but more commonly fibrous. The cells also may be scattered or aggregated, multiform, and resembling either mature or rudi-

mentary cartilage cells. Thus, their envelope, more or less defined, encloses one or more nuclei, within each of which again is found a nucleolus or two. Occasionally, the nucleus may appear radiated, not unlike the lacunae and surrounding canaliculi of osseous tissue. We may therefore trace an intimate structural homology between cartilaginous tumours and healthy cartilage more or less developed, and this resemblance can readily be extended to the myeloid form of enchondroma. These again are allied to fibrous tumours by virtue of one structural element—the fibre-cell; and also to cartilaginous tumours by their more abundant many-nucleated corpuscles. These corpuscles and imperfect fibres are identical with those of *normal rudimentary bone*. We may therefore regard cartilaginous tumours as so many rudimentary conditions of healthy cartilage, in conjunction with which and bone they more commonly originate than in other situations.

If we pass on to cancer-growths, we may, I think, reduce their essential structure to *developmental* stages of healthy structural elements. Neither the fibrous stroma nor cells of cancer are specific; the former with, perhaps, rare exceptions, is the natural fibrous tissue of the part wherein the cells are infiltrated; while these again resemble cartilage and certain epidermic cells. It is for this reason that Dr. Hughes Bennett limits his definition of the cancer-cell to localities unconnected with either a mucous or epidermic surface, and nowhere surrounded by a hyaline or fibro-hyaline substance—the inter-cellular basis of cartilage.

Lastly, the varieties of cancer, so far as they are distinguishable by anatomical characters, chiefly correspond to *rudimentary* stages of analogous *cartilage-cells*. The cells of encephaloid, for instance, very numerous, and diffused amid an abundant soft intercellular substance, grow most rapidly. They, therefore, often reach their highest stage of development, that of cells enclosing others; and being found, moreover, in every rudimentary stage, and, perhaps, also throwing out their most fantastic forms, present, therefore, the most varied appearance. The cells of scirrhus, less numerous and more closely infiltrated within the meshes of a dense fibrous, or other tissue peculiar to the part, grow less rapidly and variably; while those of colloid are apparently superseded by the abundant gelatinous matter in which they are suspended, but are yet of variable shape and development. I shall return again to this subject.

All I wish to introduce at present is, the pathological law of *Structural Retrogression* by arrested development of structural elements; that certain morbid growths represent only structural reversions to rudimentary conditions of analogous healthy tissues by arrests of their development; and that when, therefore, we fail to discover the *uniform co-existence* of structural conditions with physico-chemical characters, we may somewhat reconcile these discrepancies by a due knowledge of healthy developmental anatomy, and extend

thereby the value of anatomical characters in the diagnosis of morbid growths; for such varieties are essentially but phases in the existence of certain structural elements, the history of their formation, development, and maturity—their diseases and death.

(To be continued.)

ON THE THERAPEUTICAL USE OF ELECTRICITY BY INDUCTION.

By T. ALTHAUS, M.D.

ELECTRICITY has been used a long time in the treatment of diseases, but its application was very seldom accompanied with success, whilst in many cases the effects produced were even injurious. On the one hand, one was not sufficiently acquainted with the physiological effects of the different kinds of electricity, static electricity, galvanism and electricity by induction,—which must be carefully distinguished; on the other hand, there was a certain want of method and regularity in its therapeutical use, as well as an incompleteness in the construction of the apparatus. Great results have been accomplished in this matter by the researches and discoveries of Dr. Duchenne, at Paris, according to whose experiments, many of which I have seen and repeated, electricity by induction seems to be the true medicinal electricity.

Static electricity has been employed, as the so-called electric bath, highly recommended by the Italian school, but having no real effect at all; as the common electricity of sparks, which only produces a slight irritation of the skin, but is not powerful enough to penetrate into the depth of the nerves and muscles; finally, in the shape of the Leyden jar, by which violent and irregular contractions of the muscles are produced, together with painful sensations, and often so strong a concussion, that the whole body is affected by it, as if struck by lightning.

From these facts it follows that static electricity, whether as the electric bath, or as the common electricity of sparks, or in the shape of the Leyden jar, should not be used therapeutically, as it is powerless in its lower degrees, whilst in its higher it cannot be localized, and is connected with so disagreeable collateral effects, that a conscientious physician will seldom, if ever, consent to employ it. It is true that cures of several diseases have been effected by it, but this only proves that certain cases may be *always* cured by electricity, even if employed in an irrational manner. The greater number of cases either get worse by the employment of static electricity, or remain stationary. These results have led to as great a neglect of this kind of electricity as its application had formerly been over much extolled.

Nor is *Galvanism* to be considered as the true medicinal electricity. The continuous current of galvanic electricity produces the effects of an actual cautery, and can be successfully applied for the destruction of tumours, for the cauterization

of wounds, and for the coagulation of the blood in aneurism. (Galvano-caustics.) The intermittent galvanic current excites the sensibility and also acts on the contractile power of the muscles; but it has likewise the destructive power of the continuous current, although in a much feebler degree; and when applied to any point of the face or of the head, animated by the fifth pair, it over-excites the retina of the eye, an irritation which by strong galvanic currents becomes so violent that instantaneous blindness may ensue from it.

We therefore can concede to galvanism also but a limited sphere of action; whilst *electricity by induction* is capable of exciting in the highest degree the sensibility of the nerves of the skin, without ever destroying the skin itself. It has the power of producing all sensations, from simple tickling to the acutest pain, which, however, instantaneously ceases with the interruption of the current. It also is capable of penetrating the skin without injuring it, and producing the most lively contractions of the muscles. If the apparatuses of induction are constructed with a double current, the current of the first order exercises a specific effect on the contractile power of the muscles, while that of the second order exercises a specific effect on the skin and retina, which on the latter, however, is much more delicate than that produced by galvanism. It is impossible to explain at present why it should be so, but these are facts, daily confirmed by experience.

The choice of a good apparatus of induction is, of course, a matter of the greatest importance, and it is a fact that there have not been, until of late, any apparatuses uniting all the conditions necessary for medical application of electricity. These conditions seem to be the following:—

1. The apparatus must be a voltaic one, as the magneto-electric apparatuses do not possess the power required for many affections, and their current of the second order has too violent an effect on the retina when applied to the face, as, for instance, in tic douloureux and anæsthesia of the fifth pair.

2. It must possess two currents, produced severally by the thick and the thin wires, the thick wire being rolled round the soft iron in the centre of the bobbin of induction, the thin wire rolled round the thick one. When the poles of the voltaic pile are put into communication with the extremities of the copper wires, an electric modification is instantaneously effected in the state of the wires and of the central soft iron. The first are traversed by the current of the pile, and the second temporarily becomes magnetic. When the circle is again opened, the central soft iron loses its magnetism, and the natural electricity of the wires resumes its usual state. Now, we know, from the researches of Dr. Duchenne, that the current of the thick and the thin wires have not the same physiological effects—viz., the current of the thick wire (or that of the first order) acts chiefly on the contractile power of the muscles, whilst the current of the thin wire (or that of the second order) acts chiefly on sensibility and, when

by means of wet excitors applied to the face or scalp, on the retina.

Therefore, for instance, the application of electricity to the face must be quite different, according as one intends to act on the sensory nerves, in tic douloureux and anæsthesia of the fifth pair, or on the muscles of the face, when they are paralysed, or on the retina in amaurosis. In amaurosis, one acts by the current of the second order, and by wet excitors; in tic douloureux and anæsthesia of the fifth pair, one acts by the current of the second order, and by dry excitors; in paralysis of the muscles of the face, by the current of the first order, and by wet excitors.

3. Doses of electricity require to be exactly measured to suit the different constitutions, age, or sex of the patients, just as remedies for internal application have to be given by weight. Therefore every apparatus fit for medical use, must have a regulator of the intensity of the current. It would be just as difficult to explain why a cylinder of copper, when covering the wires of the bobbin, diminishes the power of the current, as why the current of the first order does not act on the retina and that of the second order does. But this also is a fact, which is daily confirmed. When the cylinder of copper quite covers the wires, the current is very feeble; in proportion as it is taken off, the current becomes stronger, and finally reaches its maximum. But although the current be very feeble, when the cylinder quite covers the wires, many persons will yet feel it too strong. Therefore it is useful to have another moderator of the current. This is composed of a tube of glass, the end of which is united with a metal-screw to put on one of the conductors of the current. A metal rod can be moved in the tube, which is to be filled with water as a bad conductor. The further this metal rod be taken out of the glass tube, the more is the power of the current diminished, and at a certain point it is hardly to be felt at all.

4. It is necessary that the intermissions of the current of induction can be made slow or rapid *ad libitum*. We find from the researches of Dr. Duchenne, that the effects of the longer or shorter intermissions are very different. The muscle which is excited by only one intermission of the current, contracts itself and then falls back immediately into perfect relaxation. When that intermission is followed by others, the contractions succeed each other, and the muscle relaxes less and less, the more rapidly the intermissions be given. In a certain rapidity of the intermissions, the contraction is almost continuous, just as if produced by the will—viz., a nervous current. By rapid intermissions, tonicity of the muscles is much developed, not only when tonicity is weakened or lost, as in certain muscular affections, but also when the muscles are in their usual state. Muscular nutrition also is much induced by rapid intermissions of the current—a fact easily to be shown in muscular atrophy. The same is to be said of sensibility, as any one may experience for himself. Therefore rapid intermissions are to be

employed with the greatest success in anæsthesia of the sensory nerves, in the loss of muscular tonicity, and in muscular atrophy. They are not to be employed, however, in paralysis resulting from apoplexy, because they might possibly occasion a renewed attack of apoplexy. The same may be said of the organs of sensation; the tympanum, for instance, is not to be electrified by rapid intermissions in nervous deafness; and, lastly, the rapid intermissions of the current are sometimes not to be employed for women and children, whose extreme sensibility to electricity is well known.

But how to change the rapid intermissions of the current into intermissions more distant from each other, and *vice versa*? The intermissions are produced by the vibration of a small piece of soft iron, put in motion by the temporary magnetism of the central soft iron of the bobbin. This trembler is, by means of a screw, approached to or withdrawn from it. When the soft iron in the centre is traversed by the electric current, it becomes magnetic, and attracts the movable iron. Now the current of the pile is interrupted, the magnetism of the central soft iron disappears, and its elastic force reduces the movable iron to its first position; then again magnetism of the soft iron, again contact, again interruption of the current. These phenomena follow each other with such rapidity that the current of induction is almost continuous, as regards its physiological effects. But the distance of the movable iron from the soft iron in the centre can be made greater or less by means of a screw. When the movable iron is approached as near as possible to the central iron, the intermissions of the current are almost innumerable; but when the screw has removed the movable iron from the central iron, the course the latter has to take is much larger, and the intermissions of the current therefore are much longer. The different intermissions are easily to be distinguished by the different sound of the trembler.

Every apparatus of induction, possessing the above-mentioned qualities may be usefully applied to the treatment of nervous and muscular diseases.* It is not long since that it was taught in the different schools of medicine in this country, in France, and in Germany, that only this or that obstetrical forceps was capable of effecting a convenient and safe extraction. It was the same with the stethoscope, the ophthalmoscope, and many other instruments. Now, it seems to be so with the apparatuses of induction, but these prejudices will also, I am sure, disappear in time. Whether the apparatus be constructed by Duchenne, Legendre, or any other, seems to be a matter of slight importance. The preference, however, will be given to an apparatus possessing the above required qualities, and being at the same time cheap and easily transportable.

So much for the apparatus. I now proceed to give an account of the method of applying elec-

tricity, invented by Dr. Duchenne, and called by him "*Faradization*," consecrating the name of Faraday, who discovered the important phenomena of induction, to this method of electrization.

The method formerly used for the application of electricity did not allow us to act on the diseased part without endangering the healthy organs, and sometimes the whole nervous system. It therefore became the problem of Dr. Duchenne to try, whether it were possible to localize electricity in the skin, without irritating the organs covered by it, or to penetrate the skin without irritating it, for concentrating electricity in a nerve, a muscle, &c. The following facts are the basis of the system of localized electrization:—

When the skin and the excitors are perfectly dry, and the epidermis very thick, as it is in many people whose professions expose them to the air and hard work, the two electric currents coming forth from an apparatus of induction reunite themselves on the surface of the epidermis without penetrating the skin. They produce sparks and a special crepitation, but no physiological effect whatever. When dry excitors are put on the skin, where it is sensible to electricity, the one subjected to the experience feels a superficial sensation coming out of the skin, and varying according to the intensity of the current from simple tickling to the acutest pain. But when the skin and the excitors are wet, neither sparks nor crepitation, nor sensation of heat, are produced, but different phenomena of contractility or sensibility are obtained, according as one acts on a muscle, or on a nerve, or on the surface of a bone. In the last case a very strong pain of quite a peculiar character is produced, and it is not allowable to put wet excitors on the surface of the bones. When the excitors are put on the surface of one muscle, the contraction of this muscle is produced, together with a sensation, which is not peculiar to the skin, but always accompanies the electro-muscular contraction; for instance, when one acts on a muscle laid bare by a wound, and no more covered by the skin. Finally, when the excitors are put on the surface of a nerve, the contraction of all muscles, animated by this nerve, is produced.

There are, therefore, two different methods of electrifying the muscles—either by concentrating the electric action in the nervous plexuses or branches, which communicate their excitation to the muscles animated by them, ("indirect muscular Faradization;") or by directing the excitation on only one muscle, ("direct muscular Faradization.") In both ways the skin and the excitors must be wet. On the muscles of the trunk and most of the limbs, wet sponges are applied, thrust in metallic cylinders, which are screwed on isolating handles. For limiting the electric power in the muscles of a smaller surface, as the muscles of the face, the interossei and lumbricales, conical metallic excitors are used, which are likewise screwed on isolating handles. These excitors are then covered by wet leather; for example, fingers of gloves.

* The apparatus I use, and which I explained at the annual soirée of the Royal College of Physicians, on the 11th of July, is constructed by Messrs. Legendre and Morin, at Paris.

Indirect muscular Faradization requires exact

knowledge of the anatomical position of the nerves. In the arm, the electric power can be limited to the median nerve on the inner and inferior third of the humerus; to the ulnar nerve on the interval between the olecranon and the internal condyle. The radial nerve is accessible to Faradization at the junction of the two upper thirds with the lower third of the humerus; the musculocutaneous in the axilla. On the thigh, indirect muscular Faradization is easier. The crural nerve is to be found in the groin, outside of the femoral artery; the two popliteal nerves in the popliteal space. The sciatic nerve is only accessible to Faradization on its origin in the pelvis, through the posterior wall of the rectum.

In the other parts of the body indirect muscular Faradization becomes difficult and delicate. On the face, the trunk of the seventh pair, covered by the parotid gland, is inaccessible to electricity, whatever may be the intensity of the current. But it can be reached, where it passes out of the stylo-mastoid foramen; here an excitator is to be placed in the external opening of the ear; in this point the nervous trunk is separated from the excitator only three or four millimetres. Its branches may be excited at the points where they emerge from the parotid gland. Contraction of the muscles being under the control of these branches, is the certain signal of their electric excitation.

In the supra-clavicular region, the excitators, placed immediately over the collarbone, act on the brachial plexus. On the summit of the supra-clavicular triangle they are in connexion with the external branch of the eleventh-pair. This nerve, the respiratory nerve of Bell, is the most excitable of all the nerves of the human body. The lower half of the sterno-cleido-mastoid and the trapezius are very little excitable. But when a very feeble current is directed on the upper half of the sterno-cleido-mastoid, or on the external border of the upper half of the trapezius—a current, indeed, which would not be expected to produce any movement in the muscles at all—the head is strongly inclined to the side acted upon, and the shoulder drawn up by a violent and sudden movement.

The muscles, like the nerves, do not all possess the same degree of excitability. If they did so, muscular Faradization would be very easy. Now, however, it is necessary to measure the electric dose for the different muscles, only rightly to be done when the operator is guided by a long experience. The electro-muscular sensibility—viz., the sensation produced by the electro-muscular contraction, is very different likewise in the different muscles. Some muscles are so extremely sensible, that Faradization is occasionally impracticable. Electro-muscular sensibility is very lively in the muscles of the face, due to the ramifications of the fifth pair, which excite these muscles. It is important to avoid always the points corresponding to the infra-orbital and submental nerves, the excitation of which gives a very painful sensation. The most excitable muscles of the face are the frontal muscle and the orbicularis palpebra-

rum; the least so, the buccinator and the masseter. On the neck, the platysma myoides is just as excitable as the upper half of the sterno-cleido-mastoid and the external border of the upper half of the trapezius. The most excitable muscles of the trunk are the pectoralis major and the muscles of the fossa infra-spinata, chiefly the rhomboidei; then follow the deltoid and the muscles of the arm. The anterior are much more excitable than the posterior muscles of the extremities. The most excitable muscle of the leg is the tensor vaginæ femoris.

It is quite certain that sufficiently wet excitators, in perfect contact with the skin, give rise to *muscular* sensation only, but at the moment when it is applied to the skin, and before the contact is perfectly established, a *cutaneous* sensation is mixed with the muscular sensation. Therefore muscular Faradization, chiefly when applied by rapid intermissions, is much more painful at the moment when the excitators are applied to the skin. It is easy to spare this sensation to the patient. Before putting the excitators on the skin, one approaches them, so that they touch each other, and the current is neutralized. Then, when they are in perfect contact with the skin, remove the one from the other, so that the electric recomposition is effected in the muscle to be excited.

Many interesting facts have been evolved from the application of electricity to the study of the functions of the muscles of the living body. It has become possible to create so a kind of living anatomy. It is true that the deep strata of the muscles, covered by the superficial ones, will not clearly exhibit their contraction. But here pathology has seconded physiology. It is chiefly muscular atrophy, terminating in fatty degeneration of the muscles, that, by destroying the superficial muscles, takes away the impediments to the electric current, and thus helps to the knowledge of the function of every muscle in the living body. Many of the theories on the functions of the muscles formerly adopted have thereby fallen to the ground. As one of the most remarkable facts now established, I only suggest, that the muscle, extensor communis digitorum, has no influence whatever on the extension of the second and third phalanges, but only on the first; that it is, in fact, the little lumbricales and the interossei that extend the second and third phalanges, and bend the first. Also, that the muscles flexor sublimis and profundus bend the second and third phalanges, but not the first. This is confirmed by many pathological facts, chiefly on lead-paralysis and fatty degeneration of the muscles. In lead-paralysis, the extensor digitorum is paralysed, but not the lumbricales and interossei. Therefore, in lead-paralysis, the power of extension of the second and third phalanges remains in all its integrity; only the first phalanges cannot be extended. On the other hand, when the extensor digitorum is not paralysed at all, sometimes the hand has the form of a claw, the interosseous spaces are deeply hollowed, the hand is very thin; the first phalanges are extended, but the second and third are bent. This condition

of the hand is due to paralysis and atrophy of the lumbricales and the interossei, and is often cured by Faradization of the named muscles.

Dr. Duchenne has given a special study to the function of the muscles of the face, to know the mechanism of the physiognomical expressions. It is true, that although these muscles have a very small surface only, electricity can be localized in every one, so as to produce isolated contractions. The way to show most clearly the part every muscle takes in the different physiognomical expressions is, to electrify the muscles of the face of a man who has just died, and whose muscles have yet retained their irritability; for the living man, when electrified, always mixes involuntary movements, not connected with the contraction of the electrified muscle, an impediment, of course, to the observation of the individual action of the muscles. It is, indeed, very interesting to see on a dead body all physiognomical expressions produced, for it is only the muscles which are put in action by thoughts, passions, and character; they preserve, during the muscular repose, the predominance of tonic force, and stamp on every physiognomy its peculiar impression. If there was not in every face tonic predominance of this or that muscle, all physiognomies would be like each other, as the muscles have the same direction, attachments, and strength, and the bones only differ from each other by their volume. So the frontal muscle, when slightly contracted, cheers up the face; more contracted, it expresses doubt, surprise; in the highest degree of contraction, and united with some other muscles, it gives the expression of an agreeable surprise or of terror; it also wrinkles the forehead, and when paralysed, the wrinkles disappear.

The *pyramidales nasi*, which are in intimate relation with the frontal muscle, and therefore considered by many anatomists as only one muscle with the frontal, in their physiognomical action too, nevertheless are the antagonists of the frontal muscle; they give a sad expression, and, when more contracted, a threatening one. It forms a striking contrast to see these two opposite movements produced in so small a space as the level of the eyebrows.

Isolated contraction of the *orbicularis palpebrarum* and *corrugator supercilii* expresses reflection; united to the *pyramidalis*, they express malice. The *platysma myoides* gives the expression of pain; united with the frontal muscle, it expresses terror; and, with the *pyramidalis*, rage. Contraction of the *triangularis nasi* gives the expression of lust. The *zygomaticus major* always expresses mirth, from simple smiling to the most extravagant hilarity; united with the *frontalis*, it gives the expression of an agreeable surprise; with the *platysma myoides*, the sardonic laugh. The *zygomaticus minor*, on the contrary, gives the melancholy air. The *levator alæ nasi* and *labii superioris* is the real weeping muscle of children, and produces a very ugly grimace. By the contraction of the external fibres of the *orbicularis oris*, the lips are everted forward, as for kissing

and whistling; the internal fibres apply the lips against the teeth, as is done, for instance, by players of the clarinet for pinching the reed of their instrument between the lips. The *levator menti* is the only muscle in action in persons who repeat their prayers inaudibly in Catholic churches. The *triangularis oris* expresses sadness; in children it is the precursor of tears; in the maximum of its contraction it expresses disgust.

As electricity is able to produce muscular contractions without injuring the skin or the muscles themselves, it may be applied, when muscular contractility is weakened or lost—namely, in muscular paralysis, whether resulting from wounds of the nerves, or from lead-poisoning, or by hæmorrhage into the brain, by rheumatism, by hysterics; in paraplegia; finally, in progressive atrophy of the muscles which terminates in their fatty degeneration.*

I now proceed to an exposition of the method of electrifying the skin. Faradization of the skin is to be practised by means of dry excitors applied to the dry skin, and by the current of the second order; it is capable of exciting, in the highest degree, the sensibility of the nerves of the skin, without ever destroying the skin itself. Only when it is practised by the strongest current and the strongest excitors, and in persons whose skin is very delicate, a little erythema sometimes subsides, which, however, very soon ceases; but never anything like inflammation or gangrene, such as is produced by galvanism.

As the different parts of the body have various degrees of sensibility, there must be different processes for cutaneous Faradization. There are, however, three principal processes, which, united with the regulation of the current by the tube of water and the copper cylinder, seem to fulfil all the conditions required.

The first process is Faradization by the electric hand. A wet excitor, which communicates with one of the poles of the apparatus, is placed on a point of the body of the patient, which is very little excitable, for example, in the inner surface of the hand; the other excitor, united with the other pole, is kept in the hand of the operator. After having dried the skin of the patient by the application of a little rice powder, the operator passes rapidly the back of his disengaged hand over the points to be excited. The application of the electric hand produces on the face, under the influence of a somewhat strong current, a lively sensation; but on the other parts of the body it evolves a sensation hardly perceptible. Lively crepitation, produced by the rapid passage of the hand over the skin, is there the only appreciable phenomenon; electricity is heard, but not felt. By strengthening the intensity of the current, there can be produced more violent sensations.

The second proceeding of cutaneous Faradization is exercised by *solid metallic excitors*, which are screwed on isolating handles. The skin must

* My own experiences on the treatment of these and similar affections by electricity will soon be published.

be dry as before; but if the epidermis be too thick or hard, as on the hands and feet of many persons, the skin must be moistened a little, in order that electricity may pass through the thickness of the skin. When it is necessary to exercise a very strong impression in a certain point, the excitors are held some time in contact with the skin. When sensibility is normal, this gives a sensation as if a red-hot nail were thrust in the skin. It can be applied chiefly near the vertebral column. The solid metallic excitors, though acting energetically on the skin of the face and of the trunk, are often insufficient on the hands and on the soles of the feet, whatever may be the intensity of the current.

For such cases *metallic wires* are employed, in the shape of brushes, thrust in metallic cylinders, which are screwed on isolating handles. The skin is to be lightly beaten by these wires, but sometimes it may be necessary to leave them longer in contact with it; the sensation produced by it is stronger than that produced by red-hot iron, according to the patients who have tried both.

I have already mentioned the exquisite sensibility of the skin of the face, due to the ramifications of the fifth pair. The most feeble current of induction exercises here an effect which is by no means felt in the other parts of the body. Sensibility is much stronger near the middle line of the face than far from it—namely, in the eyelids, the nose, and the chin, than on the cheeks. Electric excitation is more strongly felt in the nostrils than in any other point of the body. On the forehead there is not so much sensibility as on the face, and very little on the scalp. It is more exquisite on the neck and on the trunk than on the extremities; more in the cervical and lumbar region than on the other parts of the trunk; more on the inner and anterior surface of the extremities than on the external and posterior parts. The skin of the hands and of the soles of the feet can only be stimulated in a lively manner by an intense current and strong excitors.

Faradization of the skin is useful in both exalted and dejected states of the sensory nerves—viz., in anæsthesia and neuralgia; as tic douloureux, irritable breast, sciatica; in which diseases the most wonderful results have been obtained, after all other treatments had proved unsuccessful.* The same can be said of muscular rheumatism, the entire removal of which, after some applications, may be fairly reckoned upon. This applies also to protracted cases, where leeches, cuppings, vesications, morphia, Russian vapour-baths, and hydropathy, have been used with little or no success.

Finally, a few words upon Faradization of the internal organs. The tympanum has been electrified with success in nervous deafness. The *meatus auditorius externus* is to be filled with

water; a metallic excitor is then kept in the fluid, and the current is closed by putting the other wet excitor on the nape of the neck. The excitability of the tympanum is very great, and therefore only a feeble current and distant intermissions are allowable. At the moment the current is closed, the one subjected to the experience hears a little noise like scratching; the more rapid the intermissions be given, the more the noises approach each other, and they now imitate the buzzing of a fly on the window. This proves that the tympanum is affected; besides when the intensity of the current is increased, tickling and even pain is produced, together with a metallic sensation of taste in the tongue. This is impossible without excitation of the *chorda tympani*. As I have already stated, many cases of nervous deafness, which often results only from relaxation of the tympanum, have been cured by Faradization.

The same is to be said on the sense of smell. A wet excitor having been placed on the nape of the neck, the second is conducted on all points of the *Schneiderian membrane*. It has often been enough to excite very slightly the general sensibility of the mucous membrane of the nose, to call back the lost or weakened smell. For exciting the nerves of taste, metallic excitors are conducted on the edges of the tongue and on the palate. For exciting the retina, as in *amaurosis* without changes of structure, galvanism may be used, or the current of the second order of an apparatus of induction, applied by means of wet excitors to the eyelids, or any other part of the face.

Faradization of the rectum and of the muscles of the anus has been used for the cure of involuntary stools and prolapsus of the rectum; as they are often produced by paralysis of the sphincter and levator ani. Then a metallic excitor, the end of which has the form of an olive, being isolated by caoutchouc, is introduced into the rectum, and put into communication with one of the poles of the apparatus of induction; the other wet excitor is applied near the anus. Previous to this operation the rectum must be always cleared from stercoral matters by means of clysters. The margin of the rectum is so very sensible to the electric excitation, that the feeblest current applied to it excites an unbearable tenesmus. Therefore, if it is not necessary to act on the sphincter ani, the excitor must always be isolated.

Faradization of the bladder has always been done in paralysis of the bladder, which complicates paraplegia. To that end the "double excitor of the bladder" is used by Dr. Duchenne. It is composed by two flexible metallic wires introduced into a sound of caoutchouc with double channel, isolating the one from the other. The two excitors are on that end which is to be put into the bladder, so terminated that when being approached to each other they present the form of an ordinary catheter. The excitor of the bladder thus closed and introduced into it, its

* I have cured a case of tic douloureux in a lady, which had lasted seven years, and resisted all treatments, by only light applications of electricity.

wires are driven on about one or two inches, whilst the caoutchouc-sound remains on its place, so that the ends of the excitor are removed from each other. Then the two wires are put in communication with the two poles of the apparatus of induction, and conducted on all the points of the inner surface of the bladder. But it often has been enough to electrify only the muscles of the abdomen for restoring the emission of the urine, as also the constipation so often connected with paraplegia.

The muscles of the pharynx can also be excited, and when paralysed may be beneficially affected. The excitor to be applied differs in no way from that which is used to stimulate the rectum. It is conducted on the pharynx, whilst the other wet excitor is placed on the nape of the neck. It is, however, necessary to avoid the excitation of the sides of the pharynx, as they are in relation with the ninth, the tenth, and the eleventh pairs. If they should be excited, Faradization would be no longer confined to the pharynx, but extended to organs the stimulation of which would be dangerous.

Faradization of the larynx has been done with success in some cases of aphonia, produced by paralysis of the muscles of the larynx. The larynx can be excited directly or indirectly. The method for direct excitation is the following:—The excitor of the pharynx is inserted in the pharynx as low down as the posterior and inferior part of the larynx. The second wet excitor being placed outside, in the level of the cricothyroid muscle, the former is conducted on the posterior surface of the larynx downwards and upwards, and *vice versa*. Indirect Faradization of the larynx is much easier:—The excitor is directed on the sides of the inferior constrictor to reach the inferior laryngeal nerve, animating all the inner muscles of the larynx; whilst the other wet excitor is placed on the nape of the neck.

Direct Faradization of the heart and the lungs, the stomach and the liver, is not possible; but stomach, lungs, and heart may be excited indirectly by Faradization of the tenth pair, accessible through the pharynx and œsophagus. These operations seem, however, to be dangerous and not useful, so that a conscientious physician will seldom, if ever, consent to employ them.

I conclude with a few words about the electric excitation of the diaphragm, easily to be produced by Faradization of the phrenic nerve, which, taking its rise from the third, fourth, and fifth cervical pairs, proceeds downwards and inwards in front of the scalenus anticus, before it reaches the mediastinum and the diaphragm. On the anterior surface of the scalenus anticus the phrenic nerve may be easily excited. Excitors with large surfaces, viz., sponges thrust in metallic cylinders, are kept on the point alluded to, and instantly the artificial respiration is produced; the thorax is expanded, and the air rushes into the lungs with considerable noise. So it is possible to maintain respiration in a body even some time after death; and it may be easily conceived

how important this agent may become in asphyxia, whether it be produced by charcoal fumes, by opium, by chloroform, or by cholera. In all these cases the first indication is, to induce respiration, which is often to save life.

Manchester-street, July, 1867.

THE SPECULUM OCULI, OR OPHTHALMOSCOPE: ITS VALUE AS A DIAGNOSTIC AID IN THE EXPLORATION OF CERTAIN OBSCURE FORMS OF DISEASE AFFECTING THE EYE.

By JABEZ HOGG, Esq., M.R.C.S.E.,

ASSISTANT-SURGEON TO THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.

IN an able article on the ophthalmoscope in the *Medico-Chirurgical Review* (April, 1855),* the advantages which have been already derived from the use of this instrument are summed up as follows:—

“1st. The possibility of detecting the slightest impediment to the passage of light through the lens.
2nd. Of seeing the reason of the frequent unsatisfactory result of the tearing through of membranes occluding the pupil.

3rd. The advantage of being able, in many cases, to see (through the cataractous lens) the state of parts behind it; as the vitreous humour, whether healthy or abnormal; retina, whether detached, &c.

4th. In the uncertain indications of the external symptoms, we have the certainty of not mistaking an anæmic for a congested condition of the internal tissues.

5th. The advantage of not treating a patient who is amaurotic from a detached state of the retina, with too energetic medicines.”

In the forcible words of Mr. Dixon:—“A view of the fundus of an eye overspread with old coagula; of a retina detached from the choroid by effusion of serum, and undulating with each movement of the globe; of an atrophied optic papilla; of a vitreous humour filled with opaque filaments and corpuscles: these, and other palpable signs of disorganization, will force the most devoted believer in the omnipotence of mercury to dethrone his idol.”

A friend, who has lately returned from the metropolis of France, tells me that the ophthalmoscope there enjoys the highest reputation in the hands of the most eminent of our profession. Both Demarres and Sichel place great reliance upon its value as a diagnostic aid. The next case that I submit acquires additional interest from its having been seen by the latter able surgeon, whose written account of the changes observed by him perfectly coincide with a description previously given by myself to the patient.

Amblyopia: insensibility of the right retina.—J. G—, having resided at Monsooke several years, much exposed to the changes of climate

* On the Means of Diagnosing the Internal Diseases of the Eye. By C. Bader, M.D., and E. Roberts, Esq.

peculiar to the interior of Africa, found, about fourteen months from this date, (July 1st, 1855,) that the sight of the right eye was gone. The only indication of the disease affecting the eye was a slight granular state of the palpebral conjunctiva. Like most persons residing in hot climates, he suffered much from an old liver complaint, and at times with bleeding piles. This evidently exerted considerable influence over the eye affection: he found, when suffering from a "liver attack" or piles, the left eye was much weakened, and sight very dim indeed. The ophthalmoscope discloses effusion to some extent under, at least, a portion of the retina, that membrane being in part raised and detached; it is also opaque and abnormally vascular; the vessels of the retina are large, or rather dilated; the papilla of the optic nerve cannot be seen.

This gentleman had submitted himself to active treatment, under the advice of medical men, both in his own country, and on his way to this, remaining for a time in Italy for the express purpose. No good had resulted therefrom, and when I saw him he was suffering from debility, and was very nervous from fear of total blindness. I decided first to improve his general health, and accordingly ordered him a generous diet with tonics. In a fortnight, very small doses of the biniodide of mercury were added, and continued with benefit. During the month of August, he was obliged to go to Paris on important business, and there a friend persuaded him to consult Sichel. Upon his return to London he called upon me, stating what he had done, at the same time showing me the opinion and prescription obtained. He said he became much alarmed when the application of leeches was insisted upon by Sichel, for this reason, that on a former occasion when leeches were prescribed, his sight in the left eye was made worse by them. He therefore decided to continue my treatment, from which he had been deriving some benefit.

The treatment recommended by Sichel to this patient is somewhat novel. I am therefore tempted to subjoin it for those who feel an interest in knowing how such an authority would have treated this case.

After having very carefully examined the eyes with the ophthalmoscope, and giving almost the same description of the changes in the various tissues of the eye as above, Sichel directs the patient to apply twelve leeches before the right ear; on the following day to be purged with two glasses of citrate of magnesia; after which, to make four applications daily on the forehead and right temple with a bit, as big as a small bean, of Neapolitan ointment.* On the third day, four leeches to be applied to the anus, to take, night and morning, one of the following powders: calomel, ten cent.; golden sulphuret of antimony, five cent.; carbonate of magnesia, fifty cent.:

mix, and divide into ten powders or packets. After three days, suspend these medicines, and substitute the copper pomade (*Paris Pharmacopœia*) for the Neapolitan ointment, and take fasting every morning, in a little coffee, cream of tartar, fifteen gram.; carbonate of magnesia, ten gram.: after eight days, return to the use of the Neapolitan ointment and calomel powders, which finish. When these are all gone, take every second day the cream of tartar and magnesia powder as before. On the alternate days take of barium drops, as described in the *Paris Pharmacopœia* (No. 1, *du 8 Abou*). When the pomade Neapolitan is finished, again use several pots of the copper pomade. From time to time suspend the cream of tartar and magnesia powders, and take, morning and night, for eight days, half of one of the following powders:—precipitated sulphur and cream of tartar, of each five gram.; sugar of lemon, ten gram.: mix, and divide into twenty packets. Take three times, at intervals of ten days, the citrate of magnesia purgative; and the next day apply six leeches to the anus, unless the piles should have been bleeding considerably. From time to time substitute the sulphur and cream of tartar powders; and take also from two to four of the following pills:—gum ammoniacum and sulphate of potash, of each three gram.; Barbadoes aloes, one gram.: mix, and divide into fifty pills. After having used three pots of the copper pomade, commence bathing the eye five or six times a day with the following collyrium, at first diluted with water, let fall a drop between the eyelids:—distilled water, one hundred gram.; cherry laurel water, five gram.; borax, one gram.; quince mucilage, ten gram.: mix. Subsequently, employ the following collyrium in the same way as directed before: distilled water, ten gram.; sulphate of zinc, five cent.: dissolve. Try two or three phial bottles of it; and, when it is well borne, continue the use of it twice a week, night and morning. Suspend its use at night, and put a drop of the following into the eye: distilled water, ten gram.; sulphate of copper, ten cent.: dissolve.

The diet must be mild and moderately nourishing; no liquors, no pure wine, no coffee without milk; the same proportion of vegetables as of meat and bread. When exposed to a strong light, to wear tinted spectacles, not too near the eyes; work as little as possible; use the eyes upon distant objects, or objects partially illuminated; do not work upon small objects, or try to read small type; remove the object as far from the eyes as possible, and every few minutes look from it to the distance. If the mouth has not been affected by the use of the Neapolitan ointment and calomel, return to it after having left it off for three or four weeks. Continue the other treatment a long time, and after three months apply with a brush some blistering spirit, or a small blister about the size of a two-franc piece, to the right side of the neck and ear alternately. Let one heal up before the other is applied; after the first blister, purge again, and continue the

* This ointment is a preparation of mercury, corresponding to our mild mercurial ointment, and the therapeutic effect is somewhat the same.

treatment a week; then apply five or six small flying blisters to the right temple.

Partial insensibility of retina, with exposed patches in choroid. (See Fig. 3 in THE LANCET, (Aug. p. 127.) S. E—, aged twenty-seven, schoolmaster, admitted July 2nd, 1855. Gradual dimness of sight came on in both eyes, so much so, that since May last, he has been obliged to resort to strong magnifying glasses, which have barely enabled him to continue his duties. He is a nervous man, and suffers much from a fear he has of losing his sight. Has been much troubled with headache and constipation of bowels; candle-light distresses him very much, and he is compelled to discontinue reading at night. Pupils dilated; but with this exception there is nothing that would indicate the existence of any disease. The ophthalmoscope shows the dioptic apparatus is perfectly clear; fundus of eyes very pale and red in colour, with a few white patches in choroid. There is a pink cloud hanging as it were before the optic nerves, which partially obscure the retinae; the periphery of optic nerves, at upper two-thirds, presents an irregular margin. Ordered, blue pill, two grains; extract of hyoscyamus, one grain; compound Galbanaum pill, six grains, every night.

July 12th.—Improving; bowels sluggish. Continue pills, and take also, sulphate of magnesia, one ounce; dilute sulphuric acid, two drachms; infusion of calumba, twelve ounces, one ounce three times a day. The cornea at this time appeared to be more convex than normal; he was therefore recommended to assist the sight with a pair of No. 2 concave spectacles, and continue his medicine.

30th.—Much better; thinks he can see nearly as well as ever. Has permission to go to the country. Discharged, cured.

E. V—, aged thirty-one, admitted July 8th, 1855, states that in his left eye he has three or four deep-brown scales, with one much larger than the rest. They are enclosed in circles by day, and at night resemble spots and a network with blood, and occasionally long streams of light greatly interfere with his sight. He supposes the disease to have arisen from a blow on the temple seventeen years ago, for which cupping, leeching, and salivating, were resorted to without much benefit. The ophthalmoscope shows the retinoid vessels to be in a congested state in the left eye, giving off a circular zone of vessels, nearly rendering obscure the entrance of the optic nerve. In the right eye, there is less congestion, but a great many vessels cross the entrance of the optic nerve, which are the cause of the web-like appearance of which the patient complains. Small doses of biniodide of mercury in infusion of quassia it was deemed advisable to prescribe. To attend as an out-patient.

August 8th.—Not attended for some time, but has continued to take the mixture; eyes then showing signs of improvement. The medicine was taken regularly for three months, at which time he was enabled to return to his employment,

expressing himself satisfied with the benefit already received. I again examined his eyes, when the congestion appeared much less than before, and the entrance of the optic nerve, with its vessels, appeared clearer and in a nearly normal condition.

J. M—, a porter, aged forty-two, applied for advice on the 20th of June, 1855. The history he gave of his disease was, that about Christmas, 1854, he first noticed a dimness of sight in the left eye; shortly afterwards he was attacked with rheumatism, and became an inmate of one of our general hospitals. He was soon cured of the latter disease, but his sight remained unchanged, and, continuing to grow worse, he then applied for admission to the Royal Westminster Ophthalmic Hospital.

There being no outward signs of disease, an examination was made with the ophthalmoscope. In the left eye the whole fundus was of a very pale pink colour, and the vessels of the retina were obscured by a greyish web; the lens and vitreous perfectly clear. In the right eye the lens was split up into segments, but the divisional markings were so faint as not to be seen without the aid of the convex lens; the fundus was of a pale colour, and the vessels, as far as they could be made out, were small. His general health was not good; it was therefore thought desirable to try a tonic plan of treatment, and this was followed by the best possible result. The sight of the eye was much improved at the end of three weeks. I believe the opacity of the lens in the right had slightly increased; nevertheless, in this case the cataractous disease had been entirely overlooked, and said not to exist.

CASE.—H. S—, aged fifty-two, a waiter applied July 11th, 1855, suffering from loss of sensibility in retina. He stated that about Christmas last his sight began to fail, and is now so imperfect that he cannot follow his occupation, which is chiefly night work in a tavern. He was advised to apply, about a month ago, to a *female oculist*, who told him the optic nerve was diseased, and nothing could be done to stop its progress. She afterwards said a cataract was forming, and put a *drop* into his eye, which was much worse after it. The patient, a small thin man, a widower, having several children to support, is suffering much from anxiety, his means of subsistence being very precarious; he has a distressed and anxious aspect. Pulse low. No subjective sign of the diseased condition, except dull and sluggish state of irides.

Examined by ophthalmoscope.—An anæmic condition of the vessels of retina, which are of a faint pink colour, remarkably small and pale, exposing a large portion of a very white papilla optica. The dioptic media perfectly clear and free from disease. Assuring him that no great amount of disease could be detected, and that he might soon expect to be cured, the compound iron mixture was prescribed. His general health improved rapidly, and in a month he was quite well. I need scarcely add that the anæmic con-

dition of the eye, with impaired vision, was induced by overwork, anxiety, and an insufficient diet.

J. C——, aged thirty-eight, shoemaker, admitted Aug. 16th, 1855. Sight dim for the last three years; left eye particularly so. At present cannot read large print; suffers from bilious headaches and heaviness over the brow, for which he has often been under the care of a medical man; "never had very good health;" is married; smokes a good deal; eyes rather heavy and full, with great desire to sleep. Two days ago found the sight of the left eye nearly gone. Ophthalmoscope shows congestion of the choroid; vessels of retina large and loaded; entrance of optic nerve in the left eye nearly covered by a dark spot, which extends to foramen centrale; lens and other structures perfectly transparent, and seemingly healthy. To be cupped at nape of neck, and to take a three-grain blue-pill, with two grains of extract of hyoscyamus, every night; aperient draught every morning. The dose was continued for a week, and a mustard plaster every night to the nape of the neck. This treatment had the effect of removing so much of the congestion that it was then deemed desirable to order him to take two pills, every other night, containing blue-pill, three grains, compound Galbanum-pill, five grains, with compound rhubarb draught, in infusion of calumba, twice a day. This he continued up to the 10th of September, when he appeared so much better in every respect that he was able to resume his business.

E. B——, aged twenty-nine, domestic servant, admitted September 6th, 1855. Congestion of the choroid and vessels of the retina. This patient was of a bilio-nervous temperament; and both pupils were rather contracted: slight ptosis and quivering of left superior palpebræ. Her sight has been affected for six or seven years—at times more so than at others; the quivering of the eyelid began only a few months since; not subject to headache, but occasionally has shooting pains through the temples; feels a great weight in the eyes, and is giddy on rising from a stooping posture. Catamenia small in quantity; appetite bad; pulse weak, soft, under 70.

Examined with ophthalmoscope.—Considerable congestion of the choroid and vessels of the retina, forming a complete network over the entrance of the optic nerve, leaving only a pin's point bare. Ordered sulphate of magnesia, half an ounce; sulphate of iron, twelve grains; dilute sulphuric acid, two drachms; infusion of quassia, twelve ounces, one ounce to be taken three times a day, Blue-pill, two grains; compound Galbanum-pill, four grains; extract of hyoscyamus, one grain, two pills to be taken at night. Cantharides plaster to nape of neck.

October 1st.—This patient having steadily persevered with the iron remedy—blisters repeated occasionally—presented herself at this date with nearly all the symptoms subsided, and her sight gradually improving.

J. B——, aged thirty-four, a clerk, admitted

Sept. 6th, 1855. First noticed a reflection of evening gas-light in church; saw two distinct rows about a quarter of a yard from each other. Upon further effort found he could not see to read with the left eye; there was a kind of mist immediately on the spot he looked at, and the lines, instead of appearing straight, were zigzag, and every upright object diverged from the perpendicular to the right; thus the sight became gradually more and more indistinct, until at last he could not discern any object.

Examined with ophthalmoscope.—Exudation into retina, the central vessels nearly obscured by an apparently overhanging cloud or web. Ordered, blue-pill, five grains, at night, and sulphate of magnesia, half an ounce, in the morning, which treatment was occasionally discontinued and then resumed.

On the 20th of October he says: "I can now see a considerable distance, but every object seems in two places, the one not so distinct as the other. I cannot yet see to read other than very large print; for instance, the heading of a newspaper: the lines are, however, much straighter than formerly." At the end of the month he found himself, by a steady continuance of this plan of treatment, so much improved as to be able to return to his duty.

Gower-street, Bedford-square, 1857.

A MIRROR OF THE PRACTICE OF MEDICINE AND SURGERY IN THE HOSPITALS OF LONDON.

Nulla est alia pro certo noscendi via, nisi quam plurimas et morborum et dissectionum historias, tam aliorum proprias, collectas habere et inter se comparare.—MORSEACI. *De Sed. et Caus. Morb.* lib. 14. Proœmium.

ROYAL FREE HOSPITAL.

Elephantiasis of the Clitoris, attaining to the size of a Small Adult's Head; Successful Removal.

(Under the care of Mr. ALEX. MARRKEN.)

WHEN we first glanced at the patient, the subject of the tumour about to be described, who lay on her bed undergoing examination, we thought it a case of elephantiasis of the scrotum, but recollecting that the ward was filled with females, we had no difficulty in coming to the conclusion that an example of elephantiasis of the clitoris was before us. This affection, as we have had occasion to point out in a former "Mirror," is by no means a common one in cold and temperate climates, hence somewhat rare in this country; but in India especially, in Turkey, and also in Persia, the disposition to hypertrophied growths of the genitals is by no means uncommon. We have authority for stating, that the women of Tibet and Tartary are subject to fibro-cellular enlargements, but that they are rare comparatively amongst the Chinese. Had it been otherwise in

the last, we might repeat with certainty that the affection is common in hot climates, but it is not altogether the case. For, again, the women of the South Sea Islands, although repulsive in their habits, are rarely affected with such enlargements. Within the last ten months we have met with four examples in the London hospitals, which have been noticed in our "Mirror." The tumour in the following case hung down between the legs, was very pendulous and heavy, and as large as a small adult head. It had a well defined thick pedicle, was removed with much facility by the method described, and scarcely any blood was lost; in composition it resembled the structure of all growths of similar situations, being fibro-cellular, with a preponderance of the white fibrous element.



Sarah P——, aged twenty-four, married three years, and has had no children. She contracted the venereal disease when only fourteen years of age, but the tumour of the genitals first commenced to grow about three years ago, and progressively increased till it had attained to a large size, and totally stopped up the outlet of the vagina. She was admitted into the hospital on the 6th of July, when on examination it was found that the tumour grew from the corresponding part of the genital organs to the clitoris, and upper part of the nymphæ, but very much implicating the latter, as well as nearly closing the vagina, from the adhesions it had formed during the progress of growth. She submitted to operation on the 20th of July, under the influence of chloroform. A double ligature was passed through the centre of the neck of the tumour, and tied above and below with firmness; the neck was then divided with the knife, and the tumour was detached. There was a little hæmorrhage, which was controlled by a few touches of the actual cautery. From the time of the operation to the present moment she has gone on without a single bad symptom, and the external parts have assumed a

natural appearance, and a healthy and normal condition.

The following is a description of the growth by Mr. F. J. Gant:—The tumour is the size of a very large cocoa-nut, and weighs thirty ounces. It is pear-shaped and pedunculated, and grew from the anterior commissure of the labia majora, and from the situation of the clitoris. Externally, it has the character of true skin, thickened, and corrugated here and there. On section, it is firm but succulent, of a creamy-white colour, and slightly vascular. It consists almost exclusively of white (cellular) fibres, disposed in a dense mesh-work, with abundant granular matter intermixed, and is a variety of the fibro-cellular growth.

UNIVERSITY COLLEGE HOSPITAL.

Blow on the Head, producing a Scalp Wound, with Excitement and Rigors some days after; a Cerebral Abscess evacuated by the Trephine; Death.

(Under the care of Mr. MARSHALL.)

THE early history, in the present case, is incomplete; but we know the patient received a blow on the head, which produced a scalp wound, and most probably concussion of the brain, from which he recovered. He was treated for the scalp wound as an out-patient of the hospital for some days, but was admitted into it, as the wound had become sloughy. Inflammation of the brain, of a subacute character, set in, with the formation of matter, known by the occurrence of rigours; and as he was becoming somewhat drowsy, Mr. Marshall trephined the skull through the scalp wound, and gave exit to some matter; but as it is so often unfortunately the case when this has to be done, the brain and its coverings at the seat of injury were too extensively implicated to permit of recovery, and a fatal result ensued on the tenth day after admission.

There were three influences at work here—irritation and inflammation, produced no doubt by the increased vascular action, slowly supervening as the result of the concussion; and compression, from the effusion of pus upon the membranes, and the formation of an abscess in the substance of the brain itself. This last condition was about commencing to show itself, when the trephine was most judiciously employed.

Much excitement and delirium were present on the third day of the operation, under which the patient sank. The bone was necrosed at the seat of injury. Now, the various phenomena presented by this case would lead us to ask, as the early history was imperfect, whether the disease of the brain was consequent upon the concussion in the first instance, or the result of extension from without? The principal argument in favour of the latter is, that for several days he was being treated for a scalp wound merely. But then, again, every surgeon knows that the chronic or subacute form of inflammation of the brain may not come on for days, or even months, after the infliction

of the injury; and the condition of the brain found after death leads us to believe all the effects produced were the result of the concussion primarily.

We are indebted to Mr. T. Vincent Jackson, house-surgeon to the hospital, for the following abstract of the case:—

R. H—, a man aged forty-eight, an out-door patient of the hospital, was admitted August 3d. The patient had been treated for a simple scalp wound, previous to admission, but the wound having become sloughy and spreading, he was made an in-patient. The following was his condition on admission: Half an inch above the ear, and an inch and a half posterior to it, is a circular wound about the size of a half-crown. Within the wound is a large piece of sloughing cellular tissue. This soon separated. His diet was liberal, and some tonic medicines were ordered.

Seven days after admittance, the patient appeared somewhat excited, and not quite rational at times. The nurse's report says he has no headache. During the night he woke up several times, declaring something was moving before him; skin hot; pulse full, 130; tongue furred. He was treated for this—head shaved and cold applied.—At eleven p.m. the same day, the patient had a shivering fit. The pyrexia continued to increase. Mercury was ordered.

August 11th.—Has had a second shivering fit; speaks in a sleepy, hesitating manner.—Two p.m.: Mr. Marshall trephined him. A small trephine was used, and a circular piece of the exposed parietal bone was removed, of the diameter of a fourpenny piece. When the bone was removed a small quantity of very fetid pus was scraped from the dura mater at the upper part of the opening. As the trephine sawed its way through, it was evident that it passed through dead bone. The brain was seen pulsating.

12th.—The patient did not sleep very well during the night. A little pus was removed from the surface of the dura mater. No pulsation of brain can be seen, although its movement can be felt. The membranes appear dark and crisp in the centre; pulse 102, soft.

13th.—The patient became more excited and got out of bed, and walked about the wards. Skin hot; pulse quick and somewhat wiry. No headache. The symptoms continued the same, and he died during the night.

Post-mortem examination.—On removing the scalp beneath the tendon of the occipito-frontalis, at the junction of the occipital with the parietal bones, and external to the wound, purulent infiltration was found. The scalp surrounding the wound was brawny and infiltrated with sero-purulent fluid. On removing the skull, the dura mater was found to have increased vascularity, and that part of it which was exposed by the trephine was covered by dirty-looking lymph. The sinuses of brain were very much congested. On exposing the cerebrum at a point corresponding to the external wound, beneath the arachnoid, the brain looked blackened and almost sphacelat-

ed. On slicing the brain at this point, the substance appeared broken down and infiltrated with dark-coloured pus. The altered condition extended literally into the brain for the distance of one inch. On slicing the brain at various points punctiform redness was manifest. Lateral ventricles not fuller than natural. Great congestion, almost approaching to hepatization, of both lungs was found.

KING'S COLLEGE HOSPITAL.

Subcutaneous Division of Varicose Veins the same day they are ligatured.

(Under the care of Mr. HENRY LEE.)

OUR "Mirror" has afforded evidence on several occasions of the good results of ligaturing varicose veins, by means of passing pins under the veins, and then applying twisted sutures. This is the common practice of Mr. Erichsen, at University College Hospital, whom we have seen treat a large number of cases with success. He, moreover, after the veins are obliterated, divides the impervious cord subcutaneously, thus ensuring the complete eradication of the vessel itself. This last proceeding was introduced by Mr. Lee; but we have seen cases treated with success by Mr. Erichsen even without resorting to it.

An improvement upon this—at least so Mr. Lee considers it—we saw practised last Saturday, upon a young man whose right internal saphena vein was very much enlarged, tortuous, and painful. Two pins were passed under the vein as usual; the vessel was then divided immediately after subcutaneously, and the twisted sutures applied. This was a suggestion of Mr. Bowman's, and the advantage is said to be that the patient is cured some two or three days sooner than by the slightly older method. A patient upon whom Mr. Lee thus operated on the 8th of August was discharged cured on the 22d. Another operated upon on the 15th was about well on the 22d. We must confess we are not prepossessed in favour of it, but prefer the division of the vein when the circulation has ceased within it, or to trust to the obliteration without division at all. The great danger which is to be feared in the treatment of varicose veins is from puncture of the vein by the pin, which is avoided if the vein is lifted well up, and the pin passed under it. Should the vein be punctured, which is known by the bleeding, phlebitis is almost sure to ensue, with possibly bad consequences. Division of the vein so soon in the operation is like a puncture on a large scale; on the other hand, there are three cases to show that it may be done with impunity.

LOOK HOSPITAL.

Cases of Syphilitic Disease successfully treated by Calomel Fumigations.

(Under the care of Mr. HENRY LEE.)

It is not our intention to enter into the ques-

tion of what cases of syphilis are to be treated with or without mercury. On the present occasion we wish merely to give an abstract of a few cases treated at this hospital by calomel fumigations, which show the period at which the system came under the influence of the drug, and the number of baths required to produce it in each individual case. Of a number of cases which Mr. Lee kindly showed us on the 12th of June, we found as a rule that the average number of days or baths to produce this condition was four; and where the well-marked characteristic effects are produced under this plan, we noticed a really remarkable absence of the depressing influence of mercury which so commonly follows its internal administration. Besides this, it can be employed with impunity in intractable and obstinate cases of syphilitic eruptions and general cachexia, where the patient may be enfeebled and reduced, and in a state of great debility. According to the susceptibility of the patient's constitution, or the activity of the absorbent system, so is the system rapidly or slowly brought under the influence of the mercury. Thus two baths have proved sufficient sometimes; in others again six, eight, or ten have been required. There were several old-standing and really intractable forms of the disease in the hospital, which had been under various forms of treatment by mercury, &c., internally at different times, with but slight benefit, but now becoming cured by the new way of touching the system.

Mr. Lee prefers the calomel, and has given his reasons for doing so before the Royal Medical and Chirurgical Society. Mr. Langston Parker generally employs the bisulphuret, which he states answers very well, if pure and well made, especially in skin diseases, and where it is not wished to place the head of the patient in the bath. As this fumigation is looked upon as the most valuable therapeutic agent known in the treatment of all forms of constitutional syphilis, why should it not be employed in other diseases, where the effects of mercury are desired by the physician?

In the following outline of cases, kindly furnished us by Mr. Coulson, house-surgeon to the hospital, the symptoms on admission are mentioned, with the result of the treatment employed:—

CASE 1.—E. P.—, aged twenty-two. Both labiæ swollen and indurated; psoriasis about body; condylomata at anus. Calomel fumigations, ten grains, every night; mouth affected in six days; no previous treatment. Left the hospital cured April 23rd.

CASE 2.—Mary N.—, aged sixteen. Ulcer on inside of left labia a fortnight; ulcer at inferior commissure. Calomel fumigations, ten grains, every night; mouth affected after two baths. Left cured April 16th.

CASE 3.—Mary A.—, aged seventeen, admitted April 9th, with vaginal discharge and condylomata about labia and anus. Calomel fumigations, ten grains, every night; mouth affected after four baths. Left cured April 30th.

CASE 4.—F. I.—, aged nineteen, admitted 27—VOL. II.

May 7th, with condylomata about labia, inside of thighs, and about anus, and an eruption of lichen on body. Calomel fumigations, fifteen grains, every night; mouth affected after six baths. Left cured May 28th.

CASE 5.—E. L.—, aged twenty-two, admitted May 7th, with psoriasis over face; secondary ulcerations on inside of both labiæ. Calomel fumigations, ten grains, every night; mouth affected after six baths. Left cured May 28th.

CASE 6.—Louisa B.—, aged twenty, admitted June 4th, with indurated chancres on inside of labia and nymphæ, and also on inside of right thigh. Calomel fumigations, fifteen grains, every night; mouth affected after ten baths. Left cured July 2nd.

CASE 7.—Charles G.—, aged forty-two, was admitted with an eruption of psoriasis over whole of body and limbs. Calomel fumigations, ten grains, every night by inhaling. Left cured at the end of two months.

CASE 8.—Alfred W.—, aged twenty, admitted Feb 3rd, with indurated sore on inner surface of prepuce; an eruption of psoriasis over body and extremities. Calomel fumigations, ten grains, every night; mouth affected after two baths. Cured March 26th.

CASE 9.—Enoch D.—, aged twenty-five, admitted March 12th, with condylomata at verge of anus and at root of penis; indurated sore at frænum; phymosis; spots of tubercle, lichen, and psoriasis on back. Calomel fumigations, ten grains, every night; mouth affected on March 21st. Discharged cured April 2nd.

CASE 10.—I. B.—, aged forty-four, admitted March 26th, with an eruption of psoriasis over body and extremities, with thickening of prepuce. Calomel fumigations, ten grains, every night. Discharged cured, April 23rd.

CASE 11.—Charles S.—, aged twenty-two, admitted April 2nd, with large indurated cicatrix round upper margin of glans penis; thickening and induration of prepuce; an eruption of lichen over body and extremities. Calomel fumigations, ten grains, every night; mouth affected after four baths; no previous treatment. Discharged cured June 11th.

LONDON HOSPITAL.

Wound of the Popliteal Artery by the plunging of a knife into the thigh: Ligature of the vessel above and below it; Acute Rheumatism on the fourth day; Secondary Hæmorrhage, and death on the sixteenth day.

(Under the care of Mr. WORDSWORTH.)

THE following case evidently failed from a want of power to occlude the artery, probably induced by the concurrent rheumatism, which at one time threatened the pericardium, and consequently required to be treated by a somewhat restricted diet. It is evident, too, that the blow was the exciting cause of the secondary hæmorrhage, probably by disturbing the ligatures, and so interfering with the formation of an organized clot, or adhesion

of the divided coats. The difficulties were again increased by a very early separation of both ligatures. In attempting a second operation, the following circumstances required to be taken into consideration: First, the source of the secondary bleeding. Several circumstances pointed to the lower end of the artery as the origin of it; but had it been possible to decide positively on that point, secondly, in attempting to re-secure it, the artery must have been sought for by opening the popliteal space from behind, as the artery was originally tied near the joint, and by retraction it would be still more inaccessible. Thirdly. But failing in that effort to restrain the bleeding—for it might have come from above—there would then be the necessity of a third operation on the common or superficial femoral, or of amputation: the former proceeding would in all probability have produced mortification of the leg; the latter, could the poor fellow have borne it, would have met all the difficulties of the case. But on a careful consideration of all the circumstances, (not forgetting the probability of a repetition of the bleeding,) it was deemed expedient not to attempt further operative proceedings, but rather to rely on pressure on the artery above, combined with such local means as could be devised to prevent any sudden and copious irruption of blood; but the separation of the upper ligature, allowing an additional loss of blood, decided the poor fellow's fate, as fatal sinking soon followed. It may therefore be inferred that he could scarcely have survived amputation or deligation of the femoral, had either been considered justifiable. We avail ourselves of the abstract of the case, the notes of which were taken by Mr. Lloyd, the dresser of the patient.

Richard B—, aged twenty-nine, in cutting open a bale of hides, plunged a knife deeply into his left thigh, wounding the popliteal artery. Great bleeding at once occurred, and he was carried off to the London Hospital as soon as possible, being at the time of the accident in the Leadenhall market. He was admitted July 16th, 1857, under the care of Mr. Luke, in whose absence Mr. Wordsworth attended. The man was quite faint, having lost probably a pint of blood. Consequently it was considered inexpedient to administer chloroform. The wound was about an inch and a half in length and three inches in depth, on the front and inner side of the thigh, a few inches above the knee-joint, passing obliquely downwards and inwards. The house-surgeon, (Mr. Owen,) thinking it might perhaps come from the great anastomotic, had dilated the wound with a view of securing the vessel; but, on assuring himself of its deep source, applied pressure to the femoral, and despatched a messenger for the surgeon.

The temperature of the leg was not much depressed, and pulsation could be felt in the posterior tibial at the ankle. The depth of the wound and its direction, added to the mode of bleeding, at once indicated its source. The wound was therefore enlarged, upwards and downwards,

to the extent of about five inches, the muscles freely divided in its track, and, after some tedious dissection, an aperture placed obliquely in the artery, and occupying about one-third of the calibre, was found. Ligatures were carried under the artery, by means of an aneurism needle, and tied above and below the wound. Arterial hæmorrhage at once ceased, but some vein bled from the bottom of the wound; consequently graduated compresses were introduced, the edges brought together by strips of wet lint, and the whole limb tightly bandaged from the foot, and placed on an inclined plane of pillows. The patient greatly recovered after the operation, which was necessarily long and tedious, and of course attended by some loss of blood. Though a delicate and spare man, he said he had always enjoyed good health.

July 17th.—The temperature of the limb somewhat above that of the opposite leg; no hæmorrhage since operation.

18th.—The dressings removed and re-applied; no bleeding. The dresser, (Mr. Lloyd) perceived pulsation in the posterior tibial at the ankle.

20th.—A smart attack of acute rheumatism.

21st.—During the night he accidentally kicked the wounded part, and caused some hæmorrhage.

23rd.—At half past five a rather copious loss of blood, of a bright colour, which was restrained by pressure on the femoral. As the hæmorrhage has ceased since the morning, and interference must have involved a serious operation, it was decided, after consultation, to leave the case under strict surveillance.

25.—Some hæmorrhage occurred, but was soon restrained by pressure. The force of the circulation was diminished by a weight of (4 lbs.) held on the artery at the groin. Pulsation evident in posterior tibial.

27th.—Lower ligature found loose in the wound; knot secure.

28th.—Profuse bleeding at eleven A.M. As the patient was too depressed for any operation, graduated compresses were introduced into the wound, and pressure assiduously maintained by the hand; stimulants were administered, without reaction. He sank and died at four A.M. on the 29th.

On examining the wound after death, the upper ligature was found detached and loose in the wound (the lower had been removed on the eleventh day). Both ends of the artery were quite patent. The ligatures had clearly divided the coats of the artery: the upper, close to the origin of the great anastomotic, which was quite free, and admitted a crow-quill; the lower, near to some large muscular branches, which were unplugged. There was no inversion of the coats of the artery at either end; no contraction, but considerable retraction; no clot in either. The epithelium was glassy and transparent, and there was no appearance of effused lymph. A general examination was prohibited.

METROPOLITAN FREE HOSPITAL.

Subungual Exostosis of the Great Toe; Excision with Success.

(Under the care of Mr. HUTCHINSON.)

AN interesting example of this not very rare form of exostosis presented itself a few weeks ago amongst the patients at this hospital. The patient was a tall, florid girl, aged eighteen. The growth had been slowly increasing for about nine months. It was about the size of a hazel-nut, had a broad base, and was situated on the outer side of the ungual surface of the right great toe. The nail had been lifted up, and partially destroyed by ulceration. Mr. Hutchinson remarked upon the comparative frequency of these exostoses in women, stating that his experience quite coincided with that of others respecting it. He thought he had seen more than a dozen in women, and only one or two in men. He also directed attention to the age at which it usually occurred—that, namely, of adolescence, a period at which all forms of exostosis more frequently present themselves than any other. The localization of the disease was evidently due to irritation, whilst the predisposition was supplied by the tendency to vigorous growth peculiar to the age. In some cases it might possibly be that the sudden cessation of natural growth in advanced adolescence caused a temporary liability to these abnormal developments. Another fact respecting exostoses generally was that they were usually produced on a surface naturally somewhat roughened and spinous. Thus their frequency on the linea aspera of the femur, and especially on the ridge leading from it to the inner condyle, also on the borders of the bicipital groove of the humerus, whilst they are rarely ever found growing from surfaces perfectly smooth, whether round or flat. This condition of roughness is possessed remarkably by that part of the terminal phalanx which supports the nail. The wearing of much closer fitting shoes was no doubt the reason why women have them on the toes so much oftener than men. The great toe was in nineteen cases out of twenty the one affected, and almost invariably its outer border, just where the shoe would press. We have seen this form of exostosis once on the finger, the patient being a young woman under the care of Mr. Spencer Smith in St. Mary's Hospital. If we remember right, the thimble-finger was the affected one. With regard to treatment, although amputation of the phalanx had been advised by Mr. Liston, and subsequently by M. Lenoir, of the Necker Hospital, simple excision is perhaps much preferable when it can be done. It must, however, be done deeply, and requires a small curved pair of cutting pliers. It is essential to cut out the growth from its very base, as if merely its surface be removed a troublesome sore is apt to remain. This case turned out well.

ST. BARTHOLOMEW'S HOSPITAL.

Disease of the Shoulder-Joint, with widely-spread Suppuration; Excision of the Head of the Humerus by a single Longitudinal Incision; Death from Diarrhoea two weeks afterwards.

(Under the care of Mr. COOTE.)

WE have, we may almost say on numberless occasions, called the attention of our readers to the various cases in which excision of joints has been done in our large hospitals. These have included the knee, the hip, the wrist, and the elbow. The shoulder-joint appears to enjoy a sort of immunity from the disease for which this operation is required. Now and then, however, a case will occur, although very rare as contrasted with, we were going to say, the common operation of removal of the knee-joint, which at some hospitals is to be seen more frequently than amputation of the thigh, and with results more satisfactory. A case of disease of the shoulder-joint we noticed with not a little interest, some weeks back, in this hospital, which was associated with an amount of suppurative inflammation seldom witnessed. This fact alone was one of some importance in the case, as influencing the proceedings which were adopted. The patient was a weakly man, about sixty years of age, very thin and emaciated, with disease of his right shoulder-joint of five months' duration, which was supposed to have originated from rheumatism. There was a somewhat obscure grating sensation in the joint, which, with other signs, showed that the cartilages were destroyed. Repeated abscesses had formed in various situations, such as down the arm, in front of the chest, back of the shoulder, &c., and one of them opening above the clavicle leading to an immense cavity constantly discharging a large quantity of pus. He suffered severe pain, particularly during examination, and his condition was such at one period as to preclude the possibility of an operation. Meanwhile the formation of abscesses continued, and although there were circumstances which appeared to justify the delay, still it was thought best to remove the source of irritation—a proceeding unanimously approved of by the staff of the hospital.

On the 13th of July the man was put under the influence of chloroform, when Mr. Coote made one long incision, commencing above the coraco-acromial ligament, and extending downwards to the insertion of the deltoid; it was thus somewhat oblique in direction, but it sufficed to lay completely open the whole articulation. The tendons of the supra-spinatus, infra-spinatus, and teres minor muscles, which were inserted into the greater tuberosity of the humerus, were now divided. The head of the bone was still held firm by the tendon of the subscapularis; the arm was therefore rotated outwards to get at this, which, on division, permitted of the dislodgment of the head of the bone from its socket. The cartilage was gone, the bone rough, the glenoid cavity being in the same condition. The head

was sawn off above its anatomical neck, and some short ridges of bone were cut off with the forceps. Not an artery required to be tied, and on bringing the edges of the wound together, the shoulder looked almost natural, with a long wound as if inflicted by a sabre. The effect of the operation was the diminution in the purulent discharges, especially from the large cavity in the neck. On the 19th the discharge was stained with blood, but this subsequently disappeared. He was subsequently seized by an attack of diarrhoea, which was prevalent at the time, and sank gradually a fortnight after the operation.

At the autopsy, all the structures around the wound internally looked dull and unhealthy, and the bone was not necrosed. An enormous quantity of pus—nearly two pints—flowed out from the remains of the different abscesses. The large abscess on the neck occupied the whole of the pectoral region, the region of the back, the posterior scapular region, and the arm. The left lung was consolidated and adherent to the pleura from old disease. The right lung was healthy, although this was the side of the external disease.

In some observations made upon this case, Mr. Coote dwelt upon the peculiar incision made, which he thought especially suitable and proper in these cases, and afforded every facility in completing the succeeding steps of the operation; and the division of the tendon of the subcapularis muscle, which is easily effected on rotating the arm outwards, thus freeing the head of the bone.

The form of incision generally adopted to remove this joint is a T, V or L, but it may vary when the joint is destroyed from a gun-shot wound. In fact, excision of the shoulder-joint is the one which the military surgeon has more often to do than any other, and is by no means common, as we said before, in civil practice. If also disease of the shoulder is less common than that of other articulations, when present it has concomitants, in the way of extensive and widely-spread suppuration, which make the prognosis very serious, perhaps more so than that of any other joint.

ROYAL LONDON OPHTHALMIC HOSPITAL.

(MOOREFIELDS.)

Report of Operations performed at this Hospital from the 25th of July to the 25th of August, 1857.

(Under the care of the Surgeons.)

THE following summary of operative proceedings will be read with much interest. It has been kindly furnished us by Dr. C. Bader, curator and registrar to the hospital:—

LACHRYMAL SAC.

Two cases of purulent discharge from the lachrymal sac treated by the actual cautery; no diseased bone could be detected. In one of them (a child) the incision was commenced from a fistulous opening in the skin, and enlarged upwards. The ticket of a former case treated in this manner

has been returned. The patient (a boy) has signs of scrofulous disease about him. The disease of the sac has been of three years' standing; the contents escaped at different periods by an abscess opening through the skin. There was at the time of canterization, (June 30th,) regurgitation of purulent matter from the upper, and obstruction of the lower lachrymal punctum. On the 4th of August the wound was completely healed, and according to the patient's own account, the tears do not overflow "unless he is out in the dust."

EYELIDS.

Two cases of *nævus* of the upper lid in children. In order to secure the whole of the *nævus* in one case, a needle was first passed below it, then at right angles, a double thread carried below it again, and each half separately tied beneath the needle first introduced, which was then withdrawn.

Removal of the palpebral edge of both upper lids, as far as regards the eyelashes; they were thought, by their unevenness, to keep up an irritation of the cornea.

For entropium of both lower lids, removal of an oval piece of skin, with the corresponding portion of the orbicularis.

Entropium of the right upper lid. (Case of Mr. Streetfeild.) By a preliminary operation, the palpebral aperture had been enlarged (at the outer canthus) so as to give a freer movement to the lids. This having succeeded, an incision was then made about one line from, and along the whole palpebral edge; then a triangular piece, composing the whole thickness of the fibro-cartilage, was removed; this piece had its base (about one line broad) at the skin, and its apex near the conjunctiva. The skin incision was united by six fine sutures. The patient, when last seen, was much improved.

One case of enlargement of both palpebral apertures, preparatory to the above-mentioned operation for entropium, with the view of saving the eyelashes.

Fifteen Operations for Internal Strabismus.—The tendons were divided sub-conjunctivally. It may be remarked, that if more than the tendon is divided, the eye will nevertheless not become everted so long as the conjunctiva is spared.

CORNEA.

Removal of part of what is called *Staphyloma Corneæ*. In this case it consisted of lymph, which was effused, organized, and extended on prolapsed iris. Its most prominent part was excised with the canula scissors.

One case of conical cornea underwent the second operation; the object of the former operation, to retain a part of the pupillary margin in the corneal wound, has succeeded. Mr. Bowman adopted the same proceeding on the opposite pupillary edge, by which a pupil is formed whose lower edge extends in a straight line from one corneal adhesion to the other, the remainder slightly arching upwards.

In another case of conical cornea (in a young woman), extraction of the lens has been tried. Mr. Critchett saw a decided improvement result from the use of biconcave glasses in a similar case where extraction had been performed, which induced him to make this experiment. The slight opacity at the apex of the staphyloma did not disappear after extraction was completed. The intimate connexion of a healthy lens with its capsule made its extraction in this case more tedious than in most cataractous lenses, where superficial softening facilitates their escape.

Case of a sailor (patient of Mr. Poland), where a deep-yellow substance filled the anterior chamber, hiding the iris, the eye otherwise appearing normal.—This followed a blow fifteen years ago. The yellow substance was supposed to be fluid. On opening the anterior chamber with the broad needle, a very little fluid escaped, which consisted of decomposed blood. The yellow covering of the iris could not be removed.

IRIS.

One case of dense opacity of cornea at its upper portion, with complete adhesion of the iris to it. In this case the portion of iris close to the outer and lower edge of the opacity was drawn out and snipped off. In a similar case the piece of iris drawn out was left in the corneal wound.

Excision of about one-fourth of the iris at its outer part, in a case of glaucoma, after the manner attributed to Graefe.

One case where a foreign body, which had pierced the cornea and iris at their lower part, could be seen lodged in the iris, and projecting into the anterior chamber. A small corneal incision was made, and the moment the canula tried to seize it, it disappeared behind the iris, where it remains at present.

One case of (so-called) adhesion of the iris to the capsule of the lens. According to some pathological dissections, there are cases where the pupil is blocked by pigment in its area, which is deposited on a membrane, the organized product of inflammation, and which is attached to the posterior surface of the iris and its pupillary edge, and stretches across the area of the pupil. In the dissected eyes it appeared to press on the lens capsule, but was not adherent to it. In the present case a very small portion of the pupil at its upper and outer part was not blocked up, as was seen after dilation by atropine. Opening the cornea with a broad needle, a spatula was introduced through this remainder of the pupil and behind the deposit, which, without injuring the lens, was lifted away from its anterior surface. The patient is still under treatment.

CRYSTALLINE LENS.

Nine extractions of cataractous lenses by an upper corneal section; in one case some vitreous humour escaped with the lens.

One case of extraction, in which the pupil was entirely closed by exudation; the patient had suffer-

ed much pain, and the conjunctiva was inflamed. The corneal section had, on account of the patient's struggling, to be completed under chloroform. After breaking through the pupillary occlusion with the curette, clear lenticular matter was scooped out.

Three cases of cataract treated with the needle, exposing the lens to solution.

Four cases of congenital cataract; two lenses were broken up with one, and two with two needles.

Five cases of lineal extraction of the lens. In one of the cases Mr. Dixon operated on both eyes at the same time; the lenses were thoroughly broken up, then the corneal wound enlarged with the broad needle; part of the lenticular matter was carried away by the escaping aqueous, and part had to be scooped out.

It is of importance not to wound the posterior capsule, which, if wounded, allows the vitreous humour to advance into the pupil, and to press the fragments of lens against the ciliary processes, setting up irritation of the eye.

In one case of hydrophthalmus of both eyes, extraction was tried with the view of admitting more light to the eye. During the escape of the lenticular matter and the aqueous, their place was occupied by blood. None of the tissues but the cornea and lens had been touched. The bleeding is attributed to the loss of pressure from within the globe.

Nine operations for removing a false membrane from the area of the pupil, which in some cases was done with one, in some with two needles. The sooner these membranes are removed, the more easily they are torn through; if the shred of these membranes enter into the area of the pupil, they, having only one attachment, shrink.

Three cases where, after needle operation, part of the lens remaining had assumed a membranous, well-defined appearance. In these cases a corneal section was made, the membranous remainder of a lens seized with the canula forceps, and drawn out. The escape of the aqueous and the contraction of the pupil may be necessary in one case to postpone part of the operation. It is interesting in this case that the atropine having been applied an hour and a half before the operation, the widely-dilated pupil closely and suddenly contracted the moment the aqueous escaped.

EXCISION OF THE EYEBALL.

The operation has been performed in the usual way in nine cases. This and some future reports will contain a short account of each case, because as it is impossible at present to draw limits for the indication of the operation, it is, therefore, desirable to specify those cases in which excision has been performed.

CASE 1.—H. H.—, aged nineteen. Perforating wound of cornea, iris, and lens; loss of vision; the enlargement, inflammation, and pain increasing, the sclerotic was opened at its most bulging part; a quantity of pus escaped. The relief being only temporary, excision was performed.

CASE 2.—A. J.—, aged fifty-five. Ten years ago a dimness came gradually over the eye, which one year later was followed by repeated attacks of inflammation, with severe pains. Within the last two years the same dimness has attacked the left eye, with occasional pain in it.

CASE 3.—E. F.—, aged fifty-eight. Loss of vision by purulent ophthalmia, and for three months past repeated painful attacks of inflammation. The patient was unable to use the sound eye on account of the state of the diseased one.

CASE 4.—M. A. B.—, aged thirty-five. Analogous to Case 2: repeated attacks of inflammation.

CASE 5.—J. R.—, aged forty-six. Injury of the left eye. Two years ago he had to give up his work on account of the irritation set up in the right eye.

CASE 6.—C. P.—, aged twenty-four. Ophthalmitis, with severe pain, enlarged globe, and loss of vision.

CASE 7.—M. J.—, aged fifty-three. Sudden loss of vision in the right eye three years ago; lately it has become painful, with dimness and pain in the left eye.

CASE 8.—J. D.—, aged thirty. The right eye painful; vision dull. The left eye had been inflamed six years ago; the inflammation continued for three months, and ended with partial loss of vision. Six weeks ago inflammation returned, with severe pain continuing.

CASE 9.—As Case 1.

The preparations made on the day of operation, with the history of the cases and microscopic reports of the globes excised, and sections, are preserved at the hospital, and are open to inspection.

Minor operations performed in the out-patients' consulting-room.—Twenty cases of removal of small tumours in the eye-lids or their neighbourhood. Slitting of the lachrymal duct in fifty-one cases, either for the treatment of diseases of the lachrymal puncta or canals, or for facilitating the approach to the lachrymal sac. Twenty-nine cases of probing the nasal canal for the treatment of diseases of the lachrymal sac or nasal canal.

Opening of abscesses in twelve cases. Removal of foreign bodies from the surface of the eye, fifteen cases. Three cases of purulent ophthalmia treated by scarification of the chemotic conjunctiva.

Total of major operations, 77; minor operations, 134.

CLINICAL RECORDS.

INCURABLE DISEASE OF THE KNEE, AND EPILEPSY.

THE subject of this case was an elderly man, with an old broken-down constitution from hard living in early life. He suffered years ago from disease of the liver, had hæmatemesis a year ago, and diarrhoea lately in hospital hardly controlled by remedies. He had been an inmate of St. Bartholomew's Hospital some months with extensive

disease of knee-joint, with suppuration in various directions, and an utter impossibility, Mr. Paget remarked, of saving the articulation. Mr. Paget amputated the thigh on the 5th September by the circular operation, and so effectually was the circulation commanded by Mr. Wornald, that not more than a couple of teaspoonfuls of blood were lost. Mr. Paget observed that the limb would have been removed some months ago, but the state of the man's health was so low that it could not be done. It is now done, he said, to give him a chance, as under other circumstances he was not likely to live a couple of months, the system was so enfeebled and low from the disorganization of the joint, conjointly with constitutional defects of long standing. When we saw this patient, a fortnight after, we found that he was not doing well. It appears he formerly suffered from epilepsy, a fact not known to Mr. Paget, and since the operation he has had several convulsive attacks, which have greatly enfeebled him. His condition is such at this moment that we look upon his recovery as hopeless.

CANCER OF THE LIP IN A WOMAN.

ABOUT a week ago a case of large cancerous ulcer on the lower lip of a woman was operated on by Mr. Hutchinson at the Metropolitan Free Hospital. The patient was eighty-one years old, but tolerably vigorous. She had for years been accustomed to smoke, and had held her pipe on the side which had now become affected. There was no hereditary history of malignant diseases. It had existed for about six months, and had involved half the lip. It had been very painful. The V-shaped incision was practised, and the wound healed well. Mr. Hutchinson adverted to the great rarity of cancer of the lip in women, and stated his belief that it was due almost solely to the comparatively small extent to which smoking prevailed amongst them. Still it was by no means infrequent to meet with cancer of the lip in men who had not smoked. In this instance, as in one or two others which he had examined, the structure under the microscope showed a much less abundance both of epithelial and of the compound cells than are usually met with in similar ulcers from the lips of men. Indeed in some parts the ulcer seemed rather of the rodent character than of the true epithelial; yet before excision nothing could have been better characterized than the condition of the sore, and, indeed, with the microscope, some, though but few, of the elements of undoubted cancer were seen. Mr. Paget, we believe, has made a similar observation.

ANOTHER RESECTION OF THE ELBOW.

IN the present instance the patient was a boy whose left elbow has been subject to repeated attacks of inflammation for the last eighteen months, with suppuration and the formation of sinuses leading to its interior, in which can be detected bare bone. He came under the care of Mr. Ure, at St. Mary's, who determined, in consultation, to

remove the articulation by resection. This was done on the 3rd of September, by a long incision, and the ends of the bones excised with forceps, all of which were denuded of cartilage from erosion, the entire joint being surrounded with a great quantity of that thick, gelatinous material, which of itself alone will destroy any joint. This was carefully removed, and the edges of the long wound were brought together by several sutures. Mr. Ure thought the operation was somewhat longer through the form of incision employed to remove the joint; but we did not think so, and the advantages of this one line of wound are so great in relation to the ultimate results of the operation, that they should not be lost sight of. If the incision is long enough, and the joint bent, it is completely extruded through the wound. On the 16th we saw the wound all but healed up, and so far everything had progressed well.

DEFORMITY FROM CANCRUM ORIS.

In the chapter devoted to the consideration of Cancrum Oris, in Dr. Churchill's work on Diseases of Children, wherein this affection is most fully treated of, he observes, "As may be supposed, the great majority of cases terminate fatally, but some few cases do recover, mainly those in whom the disease is primary, the constitution good, and which remain free from complications," p. 406. The truth of this we find confirmed by experience, but more especially in meeting with cases of deformity later in life, which have been the result of sloughing from this terrible affection in childhood, with the barest escape from a fatal result. In most of the cases, also, which come under our notice in the hospitals, the disease has supervened upon an attack of either scarlet fever or typhus fever, most generally the former. We remember well two cases of the kind, in girls, which were treated by plastic operation, by Mr. Fergusson, at King's College Hospital, two years ago. We saw another case, at Guy's on the 15th September, of a young woman aged nineteen, whose right cheek had sloughed away near the angle of the mouth when three years old, completely destroying the latter, and exposing the teeth and gums, the deformity being increased by the presence of a supernumerary canine tooth projecting obliquely outwards. This was the result of cancrum oris after an attack of fever. The late lamented Dr. Marshall Hall thought at one time that this affection was more common in female children than in males; most certainly we see more females suffering from the effects of it than males, although statistics do not bear out that one sex is more affected by it than the other. Mr. Cook treated this deformity by paring the edges of the cicatrized tissues, detaching the old adhesions, and bringing the parts together by stitches; but this was not accomplished till a long incision was made over the margin of the lower jaw towards the chin, which permitted of approximation. The projecting tooth was pulled out. The patient was fully under chloroform at the

first part of the operation, and bore it tolerably well.

PROLAPSUS OF THE UTERUS AND RUPTURE OF THE PERINÆUM.

The two following cases were of long standing, and the patients miserable sufferers. Both were perfectly relieved by operation, and left the hospital cured. They are quite distinct from the cases recently published by Mr. Brown in this journal.

A. H——, aged thirty-three, was delivered of her first child about three years ago. Nothing particular occurred in her labour, but she got up very early and pursued her usual avocations. She soon began to suffer from pain in the back and bearing down, which gradually increased, and the uterus began to protrude. She applied at another hospital, and, three months ago, was there operated upon without success. The uterus protruded through the external parts to the size of a full-period fetal head. Mr. Baker Brown performed his usual operation at St. Mary's Hospital on the 10th June, 1857. The deep sutures were removed on the third day, and the parts are very firmly united.

M. H——, aged twenty-seven, four years ago was delivered of her first child. The labour was very natural, and only lasted one night. The midwife who attended her, however, was very impatient, and drew away the child without waiting for the pains, and thus tore through the perinæum. She has since been delivered of another child. She has had no control over her bowels since the first labour. The perinæum was entirely torn through the septum. Mr. Brown performed his usual operation on the 1st July. There was rather more hæmorrhage than usual, and one small artery required torsion. The sphincters were well divided. The deep sutures were removed on the third day, and the parts were well united.

THREE SERIOUSLY IMPAIRED ANKLES.

WHEN the entire ankle is involved in disease, it is useless to attempt any other measure than removal of the leg; for if Syme's operation be performed, with the surrounding structures much implicated, with even a moderately diseased state of the lower end of the tibia no actual good can result from it.

A case of this kind we observed at Guy's Hospital on the 15th inst., in a man aged fifty-five, whose left ankle had been the subject of disease for the last eleven months, during two of which he had been an inmate of the hospital. The whole ankle was swollen and filled with pus, and the surrounding tissues appeared much diseased. What with the man's age and the existing state of things, amputation of the leg was deemed the most suitable measure, and this was performed, by means of the lateral flaps, by Mr. Bryant.

A similar operation was done by Mr. Paget at St. Bartholomew's, on the 19th inst., for disease of the os calcis of seven years' duration, in a man

whose age was fifty-five, but who looked very much older. Four different operations had been performed upon this patient's foot at St. George's Hospital at various times, and twice in St. Bartholomew's by Mr. Paget two years ago; and although the diseased portions of bone were removed each time, the carious condition reappeared. Mr. Paget considered the bone too much diseased to remove entire; the man's age was, moreover, he thought, unsuited to that proceeding, and at any rate he could not afford to wait the process of cure afterwards, so that amputation appeared to be the most reasonable measure; this was done by the antero-posterior flap.

A third case, at the last-named hospital, allied to the foregoing, we saw on the 5th inst., of apparently very severe disease of the ankle-joint, under Mr. Coote's care. The limb looked as if most serious mischief were present, the result of an injury but three months before. The patient was a man of nervous aspect, twenty-six years of age. Disease of the bone was anticipated, and on cutting down over the internal malleolus an abscess found to exist within it, forming a distinct cavity; this was opened, and the most marked relief was obtained within two weeks. It is, however, a matter of doubt whether, in the event of a cure being established, the patient will ever possess a strong, useful foot, from the presence of so much sympathetic irritation in the adjacent parts.

ANEURISM BY ANASTOMOSIS SPONTANEOUSLY CURED.

A TUMOUR the size of an orange was present at the inner side of the left shoulder of a boy five years old, at Guy's Hospital, but situated anteriorly upon the surface of the pectoral muscle. It was firm in some parts, soft in others, and had a stringy feel. There were some little patches of eruption upon the skin over it, and there was no doubt it was an aneurism by anastomosis, undergoing the process of spontaneous cure. It was congenital, very small at first, gradually enlarging, with pulsation, then becoming solid, the pulsation ceasing, and finally complete isolation. It was carefully excised by Mr. Cooper Foster, under chloroform, and was not associated with any bleeding at all to speak of, and lay upon the border and surface of the great pectoral muscle, whose fibres were distinctly seen. The tumour was composed of several cysts, as are found sometimes in these cured aneurisms. In the present volume of *THE LANCET*, we have described a congenital cyst removed from the axilla of an infant, at St. George's Hospital, by Mr. Prescott Hewett. Both cases are precisely similar in their nature and origin, and there can be no doubt that the origin of these cysts is correctly explained by Mr. Coote, who says that various portions of these pulsating tumours become blocked up, get isolated, assume the form of minute sacs or cysts, which enlarge, and form either one large or a series of small cysts, the original affection becoming cured.

THE VALUE OF SULPHATE OF COPPER IN GLOSSAL CANCER.

WE have watched very particularly the treatment at the Cancer Hospital of cancerous ulceration of the tongue, distinguished by its deep, excavated character, with sometimes fissures running from its sides and irregular puckerings, and very generally preceded by nodular enlargement, with difficulty in the use of the organ. Who amongst us has not felt the sensitiveness of a little pimple on the tongue, arising from a hearty supper the night before, or from some slight indigestion? These small pimples often feel very sore and tender. If they are contrasted with the pain and embarrassment in the use of the tongue affected with malignant ulceration, an idea will be gained of the really terrible nature of the latter. Patients with glossal cancer seem to resign themselves with great fortitude to their sufferings, and it is a gratification indeed to the humane surgeon to find his measures afford relief. Now, of the various substances employed by the surgeons at the Cancer Hospital as a local agent, none appear to have so much control over the ulcers as powdered sulphate of copper. This substance is very efficacious in cancer of the tongue and cheeks. It is applied by means of a camel-hair pencil, generally twice a day, and allowed to remain four or five minutes; the mouth is then freely washed out with tepid water. It produces some pain, but this is willingly borne when the relief is found to be so great; and an excellent wash of borax, half an ounce to a pint of water, used frequently during the day, keeps the ulcer and the tongue clean and fresh-looking. Under the use of the copper, we have seen the ulcers slowly heal up and cicatrize, and a return to comparative comfort, as contrasted with the patient's previous condition.

On the 25th of August, a man from Farnewood, Mathew T—, aged sixty-two, presented himself for the first time with a deeply excavated, cancerous ulcer of the right side of his tongue, extending towards its base. It had been existing for two years, and fears now were entertained that the disease would extend to the roots, and destroy the organ and the patient's life. The treatment adopted was that we have described, with the addition of a soda powder twice a day for a week or ten days. We have no doubt that this plan will prove of service here, as it has already done in so many others.

Powdered sulphate of copper is an agent of great value, which cannot be underrated in these painfully distressing cases. We may remark, as a rule at this hospital, anodynes are avoided as much as possible, and pain is sure to become less under the sustaining treatment so commonly the practice here.

SCOTT'S OINTMENT IN INDURATED TESTICLE.

WE have seen Mr. Coulson, at St. Mary's Hospital, treat indurated testicle by applying Scott's ointment on lint next the scrotum, then a piece of flannel and oil silk, with a good suspensory ban-

dage. The patient is thus enabled to go about, and a cure is effected within a short time. Scott's ointment is the *ceratum hydrargyri compositum* of the London Pharmacopœia, and consists of the stronger ointment of mercury, soap cerate, and camphor. Mr. Coulson is at this moment treating a case of chronic induration of the breast of a woman, from inflammation, with the same ointment, and pressure, as recommended by Scott, in his work in 1828.

We noticed a case of adenitis of the right groin in a boy, which was brought on by a strain, and which, after attaining the size of a fist, suppurated, leaving an ulcer, with the gland projecting from its bottom. The strain occurred seven weeks ago. The enlarged gland was freely covered with red precipitate on five different occasions, with the effect of already nearly destroying the whole of it, without any bad effects to the patient.

RESECTION OF THE ELBOW-JOINT.

On Saturday, August 29th, this operation was again performed at King's College Hospital, by Mr. Fergusson, on the left elbow of a man who had been discharged from the navy as incurable. He had been a sufferer from disease of the joint for the last seven years, with various vicissitudes during that time; now and then it was supposed getting well, but during the last four months he had a more severe attack of inflammation and suffering. He was sent to this hospital, and Mr. Fergusson made up his mind to treat the case by resection, as the disease was of incurable form—that form of ulceration of the surfaces so uncertain in healing, and so long in getting well, as to seem altogether incurable. The poor man himself was most anxious to submit to anything for relief. The usual operation for resection was therefore performed, and all the ends of the diseased bones removed, with a quantity of pulpy substance from around the joint. The ulna was denuded of cartilage, and the synovial membrane was in a gelatinous pulpy condition throughout the articulation. He mentioned a feature in the diagnosis in these cases, which he said was not mentioned by authors, and that is, the peculiar elasticity there is in the joint in these bad cases, depending upon the thickened and gelatinous synovial membrane—an infallible criterion of the kind of disease of the elbow-joint which will not yield to treatment. This peculiar condition replaces the solid firmness of the joint present under other circumstances. Another feature present in these cases is the rotatory movement in the opposing angles of the joint as well as in the ordinary motions of the joint. This last peculiarity we have referred to on former occasions.

This patient has been going on extremely well since the operation; and the other cases in this hospital mentioned on a previous occasion are doing as well as could be desired.

CANCEROUS ULCER OF THE CHEEK.

A healthy-looking farmer, Samuel P——, aged

thirty-four years, came to the Cancer Hospital from Nottingham on 25th August, with a foul ulcer situated at the inside of the left cheek, somewhat backwards. It was the size of a penny-piece, and on careful examination was found to be cancerous; but it had been only in an ulcerated condition some weeks, commencing in the form of a tubercle. There was nothing to lead one to suppose on looking at this man that anything was the matter with him, nor could there be traced the slightest hereditary taint whatsoever. There was a decayed molar tooth near the ulcer, but it had nothing to do with its appearance. A case of this kind was looked upon as of so much importance by the surgeons of the hospital, that the patient was taken in to have the progress of this ulcer stayed, else it would in a short time perforate the cheek. We will watch the case, and report upon it on another occasion.

NEUROMATOID ULNAR TUMOUR.

THE title explains itself, for the disease consisted of a growth the size of a small nut, situated near the ulnar nerve, on the left wrist of a man in King's College Hospital, which had been growing for fifteen years, during the whole of which time it caused much suffering, and at last had become so painfully distressing that he sought means of relief. Slight pressure over it caused a sensation of fainting on the part of the patient. It was removed on the 15th August by Mr. Henry Lee, and the patient left the hospital the same day, perfectly relieved from every inconvenience, the ordinary sensation in the fingers and other parts being left unimpaired. On examining the minute structure of this tumour, it proved to be fibro-cellular, with several minute nervous twigs ramifying over it, springing from the ulnar nerve, which of itself was not implicated. In this respect it resembled a neuroma, although not a real one, and therefore may be with propriety called neuromatoid. We would here take occasion to refer to an example of neuroma in the sixth volume of the Pathological Society's "Transactions," p. 49, in which the tumours were developed within the membrane which encloses the nerve tubercles; each swelling was the enlargement of an individual fasciculus. No doubt the stretching of these minute filaments over the tumour, small as was its size, was the cause of the severe pain so long suffered by Mr. Lee's patient.

STRANGULATED INGUINAL HERNIA.

A YOUNG man, aged nineteen, a baker, was admitted into University College Hospital, at one A.M. on Sunday morning, July 5th, in a state of intoxication. In the course of the morning he was able to state that three hours previous to his admission he had felt, while carrying a weight, sudden severe pain in the right groin. There was a swelling there, which he believes had not existed before, except on one occasion, two years ago, at which time it was reduced by a surgeon, who stated it to be a rupture. The bowels were

opened, as usual on Saturday morning; the taxis was applied without success.

Sunday morning.—Tumour in the scrotum, rounded, distinct, unequal to feel, red also, and painful; testicle not very distinctly felt, but little fullness in the situation of the cord. Patient states that he has a urethral discharge; a little bilious vomiting; tongue coated; still somewhat confused from the effects of liquor. Taxis repeated, and the hot-bath. Some little doubt as to the hernial character of the tumour seems to arise, on account of the existence of signs of orchitis.—Five P.M.: He was seen by Mr. Henry Thompson. Pulse 90; sickness as before; tumour large and redder; no pain or tenderness in the abdomen, except in the immediate vicinity of the cord. A brisk purge was ordered, to be followed by enema. In the course of the evening, a good many scybalæ followed the enema. After this the pulse rose, abdomen became painful, and bilious vomiting continued. Mr. Thompson visited him about seven o'clock on Monday morning, and decided to operate at once. The sac was soon reached and opened, when three or four inches of dark and highly-congested gut were found, with a little omentum, apparently in a congenital sac, to which a long and narrow canal led. At the upper end of this was the stricture, which being divided the contents were returned without difficulty. A spica bandage was applied in the usual manner. Thirty minims of Battley's sedative solution were immediately given to keep the bowels quiet. The man expressed himself much relieved two hours afterwards, and flatus passed by anus. Next day free relief took place by the bowels.

July 9th.—He is free from pain, the bowels have again acted, and he is doing as well as possible. He subsequently left the hospital cured.

LOSS OF A CASE OF EXCISION OF THE KNEE BY PERITONITIS.

LET a case be ever so well suited to an operation, with everything in favour of complete success—nay, let it be the model of a selected case for a given operation, the surgeon knows it may go on badly nevertheless, and he must at all times be prepared for any untoward result. The correctness of this remark was forcibly impressed upon us, when we learnt the result of Mr. Walton's case of excision of the knee, at St. Mary's Hospital, which we gave in a previous number. The girl went on most favourably, in every respect, for about eight days, when she complained of pain about the abdomen, which turned into acute peritonitis, under which she sank a few days after. When speaking of the case, we mentioned that it seemed one of the most favourable cases for the operation performed which we had met with for some time. In our report of it, the word trephine was inadvertently used in place of the tourniquet, which was put on to prevent the possibility of bleeding. All the other cases of this operation are going on favourably. We add the subjoined at St. George's Hospital:—

RESECTION OF THE KNEE.

WE should have noticed this case before, as it occurred about the same time as some of the others described on a previous occasion. The patient was an elderly man, with disease of the knee for about twelve months, commencing with inflammation and swelling all around the joint, at which time he was a patient in St. George's Hospital. The inflammatory symptoms subsided under treatment, but he was ever after liable to repeated attacks, and finally re-entered the hospital with his joint much diseased. Suppuration had occurred, with the formation of sinuses, and the poor man was most anxious that something should be done before (as Mr. Tatum remarked) the disease extended any further. He accordingly determined to excise the joint, as everything seemed quite favourable for such a proceeding, more especially as the patient's general health was pretty good, and the disease not of long duration. On the 9th July excision was accomplished by the usual H incision, the patella being retained in the upper flap of the H. The ends of both bones were sawn off, and accurately came into contact. The cartilages were almost completely destroyed by erosion of the bones, besides which the synovial membrane was in a state of pulpy degeneration of a yellowish colour, not unlike the fat of beef, and was sufficient in quantity of itself alone to destroy the joint. The operation therefore was the most suitable and proper for the individual case, and everything promised most satisfactory. He has gone on well to the present time, and the wound has almost healed up.

Foreign Department.

Elephantiasis of the Mamma.

M. ROUSSEAU gives the following to the *Revue de Thérapeutique Médico-Chirurgicale*, 1856:—C. Bayard, aged twenty-eight, of strong make, fair, and of a lymphatico-sanguine temperament, has had very large breasts since puberty; her sisters and first cousins present a similar development. One of the sisters noticed a considerable enlargement of her breasts during pregnancy, but they returned to the ordinary size after her confinement. The present patient began to menstruate at fifteen, and even at that time the breasts were so large that remarks were made, although she strove to conceal the fact. She married, and menstruated for the last time in March, 1856, so that she was considered pregnant. But at that period the patient was attacked with typhoid fever, in the course of which the breasts enlarged in an extraordinary manner, and have ever since taken further development. The poor woman is at the present time obliged to be constantly reclining, as, on account of the size and weight of the breasts, she can neither stand nor sit. Each breast is twenty-four inches long, and thirty inches in circumference; the skin is thick, but of the normal colour, and the follicles are very large.

On handling the mass, it is found of a spongy character, without infiltration or œdema. The left breast has no nipple; the latter had been invaded by an excrescence, and both were cut off together. The right nipple presents a hard and blackish mass, with a gangrenous smell, and a superficial and fœtid suppuration. The patient's face is thin and pale, the appetite good, the voice firm, and pulse 86. No remedial means have as yet been employed, and the hypertrophy seems to be increasing.

An Artificial Lower Jaw.

M. MAISONNEUVE, of Paris, lately removed the whole of the lower maxilla from a man aged thirty-three. The case did well, and an artificial jaw has been made for the patient by Messrs. Fowler and Preterre, American dentists residing in Paris. M. Robert, on the 2nd of December last, presented this piece of mechanism to the Academy of Medicine, when it was found to be composed as follows:—

1. An upper piece composed of a gold plate, with the fulcrum on the superior dental arch and the anterior portion of the hard palate.

2. A lower piece, forming a complete set of mineral teeth with their gums, secured on a gold plate, which is moulded on the soft parts. This piece articulates with the upper by means of a hinge and two springs, which allow of easy movements between the upper and lower dental arches.

By means of this apparatus support is gained for the lower part of the face; the lip is borne upwards, and the face recovers its harmony. The mouth can be widely opened; the patient speaks with comfort, and can raise his voice loudly; he can, moreover, triturate such substances as crusts, meat, fruit, &c., which advantage he did not possess before the artificial jaw was applied.

Ether and Chloroform Gelatinized.

PROFESSOR RUSPONI has succeeded in turning ether and chloroform into gelatine, by shaking them with white of egg in a closed receiver. The compound obtained with the ether is semi-transparent; with the chloroform it is white and opaque. This gelatine is soluble in water, and may be spread on linen in the form of a poultice. It will likewise mix with morphine, cantharidine, conicine, &c., and may thus become of great therapeutic use.

Electrical Chorea.

For the last twenty years, the physicians of Milan and Pavia have observed this disease, as presented by persons coming from the country into the hospital. It is characterized by partial clonic spasms in the upper or lower extremities, the trunk or face, but generally on one side of the body only. The movements are very like those

excited by electricity—hence the name. Dr. Dubini, of Milan, described the disease first in the *Annali* of 1846; and Dr. Pignacea has lately given, in the *Liguria Medica*, an excellent paper on the complaint, grounded on thirty-eight carefully observed cases. It would appear that the affection generally proves fatal, and the author thinks that it depends on a softening of the spinal marrow, analogous to the same kind of change of which the brain is sometimes the seat.

On Internal Remedies in Strangulated Hernia.

BRITISH surgeons are at the present time pretty well agreed as to the advantages of early operations in strangulated hernia, and most of them consider that the repeated use of internal remedies and taxis is fraught with danger. It would appear that some surgeons in Germany and Italy do not hold the same opinion, and that they administer internal remedies in cases where, in this country, the division of the strangulating textures by the knife would be resorted to. Here are two cases:—

CASE 1.—*Strangulated Hernia returned under the influence of Acetate of Lead Enemata*: Dr. FLOGEL.—Mr. N—, whilst dancing, felt an inguinal hernia on the right side (from which he had suffered from some time) becoming strangulated. Taxis, ice, and leeches did no good; vomiting set in, and twenty-seven hours after the strangulation there was much prostration and hiccup; pulse 140, small and intermitting; skin cold. The hernial tumour was of the size of a goose's egg, hard, immovable, of a dark red, and slightly painful on pressure. (At this period the knife would, in this country, have been proposed.) An enema was then given, composed as follows:—Sugar of lead, twenty-two grains, in half a pound of water; some ice was, besides, put upon the tumour. An hour afterwards vomiting and hiccup were less frequent; the enema was repeated. The tumour became less hard, and the sickness and hiccup ceased; pulse 128. The patient then slept for half an hour, and the swelling diminished one half, became soft, and was easily reduced. Alvine evacuations were then obtained by purgatives, and the patient left the hospital in perfect health.

Dr. Flügel ascribes the successful result to the styptic action of the saturnine salt, which, by causing retraction of the intestine, both in the longitudinal and transverse directions, draws the herniated portion of the bowel into the abdomen. Dr. Flügel adds that he failed in one case only—viz., that of an old inguinal hernia, where numerous adhesions had formed. The dose of the acetate of lead is from fifteen grains to half a drachm for each enema. The enemata have been administered every hour, without any unpleasant effects.—(*Ester. Zeitschr. f. pr. Heilk.*, 1857.)

CASE 2.—*Strangulated Hernia reduced under the influence of the Internal Use of Extract of Belladonna*: M. BURGATI.—A man of forty-two years, whilst busy removing heavy logs of wood

felt a sudden violent pain in the right groin, a tumour in the same region appearing at the same time. He was obliged to keep his bed; soothing applications were used during the night. Dr. Burgatti found in the morning an inguinal hernia, the tumour of the size of a hen's egg, hard, and not as yet descended into the scrotum. Vomiting of a yellowish fluid almost incessant; hiccup; pulse small; face pale; anxious expression of countenance; skin almost cold; unquenchable thirst. Taxis was immediately tried, but the patient could not bear it. M. Burgatti then gave two grains of extract of belladonna every four hours, day and night; and ordered enemata of sweet oil, in which dried camomile had been digested. No change next day in the patient's condition; food and liquids were alike rejected; but the tumour was less hard. Same treatment. Much improvement was observed on the following day; the vomiting had stopped, and an alvine evacuation had taken place; the face was less anxious; and the patient felt better. Reduction was then extremely easy; and in the course of three days the patient had completely recovered.—*Il Raccolto, med. di Fano*, July, 1857.

It seemed strange that neither of the surgeons had recourse to the relaxing effects of chloroform.

M. Baudens on Gun-shot Wounds.

M. BAUDENS, late chief surgeon in the Crimea, lately read a paper on "Gun-shot Wounds," before the Academy of Sciences at Paris, wherein he embodied facts of some importance. The author says: "In the Crimean campaign, the severity of gun-shot wounds was not only owing to shot and shell, but to the improvements in the small arms, and the use of the conical instead of the spherical bullets. The former travelling at a quicker pace than the latter, enter the frame in a straight line, and cause more considerable and extensive splintering of bone. Resistance changes the shape of the conical balls, but does not alter their course; they become elongated or flattened, or they separate into several pieces, more frequently than globular bullets. The exit of a conical ball is almost always in a straight line with its entrance, whilst the course of a round ball is not seldom tortuous.

"It was held as good surgery, in 1830, when I was in Algeria, to enlarge the wounds made by the entrance and exit of balls, so as to prevent strangulation and its consequences. I, however, found that when the wounds were not enlarged for want of time, the patients did extremely well, and I denounced the practice. In the Crimea, the enlargement of wounds was entirely abandoned. The great point is to remove foreign bodies.

"It often happens that a ball is extremely difficult of extraction: enlargement of the wound is then of no use. I have noticed that the obstacle to removal is often a little envelope of cellular tissue which surrounds the ball; this kind of hood being incised, the projectile comes out with facility.

"Before the Crimean campaign, it was considered that when a ball had fractured the femur, the limb should be amputated. This rule has been considerably modified by the use of my elastic fracture apparatus. Several limbs have thus been saved in the Crimea and at Constantinople.

"Disarticulation of the thigh-bone has no chance of success till some time after the infliction of the wound; hence it is incumbent upon the surgeon to attempt to save the limb, because disarticulation, in case of failure, is more likely to succeed after the patient has completely recovered from the shock. The upper extremities can often be saved, not only by the careful removal of splinters, but by the practice of resections. These were very frequently performed in the Crimea, in preference to amputation, and with the best success. Care should be taken to leave the periosteum unharmed."

ADDRESS TO STUDENTS.

OCTOBER upon us again! How soon it has come round! Every date we fix to our letters, the early dusk, the late dawn, chilly mornings, falling leaves, and a certain autumnal aspect and cadence about all natural sights and sounds, all tell us that October is near, and that that day is close upon us which will bring the medical student to the commencement, or resumption, of his hospital studies.

As the time draws nigh what a stir there is amongst all those who are in anywise engaged in medical education. How they all begin to look about them—lecturers and students, physicians and surgeons, examiners and registrars, *et hoc genus omne*, all wake up and stretch themselves after their long summer hybernation, (if we may be pardoned the paradox,) and set themselves seriously to work to put the machinery in order and set it going, which is to run on with but little interruption till next July. The conscientious lecturer goes over his notes, amends them, interpolates all the additions to his subject since his lectures were last delivered, furishes up his diagrams, adds to his stock of preparations, endeavours, in short, in every way to make his instructions the best he can give.

The deliverer of the introductory lecture is rounding and polishing his periods, that he may, on the first of October, play the Roscots, and bring down the benches. The anxious student is rubbing up his preliminary knowledge, laying down his plans of study, collecting his little library, and wondering if he shall faint at the first operation, and how he shall stand the dissecting-room.

To us, also, the first of October brings its duties! To us the student will look for all necessary information; to us the hospital physician and surgeon will look for a fair and intelligent reflection of metropolitan hospital practice; in our columns all readers, whether teachers or taught, or neither, will expect to see anything

that is at once true and new, a candid interpretation of the general sense of medical public opinion on all questions of professional interest, the latest intelligence on medical subjects, and a regular supply of sound and instructive medical teaching. All this implies duties, and very onerous and important ones, both present and prospective, and it is to one of the present duties—that of giving a little practical advice to those students who are about to commence their studies on the first of next month—that we now devote a little time and space.

Life is a succession of beginnings; we are always beginning something—years, months, weeks, days, the seasons of the year, our plans and schemes, the very functions of our bodies—something or other we are always beginning. A less general and less ambitious proposition than this, but one equally true, and perhaps more generally felt, is, that beginnings are very important things; that the old proverb, "Well begun is half done," is about as true as any current saying in existence. Now the first of October will be one of these beginnings to those whom we address; it will be the commencement of one of those many lives of which the life of each individual simultaneously consists. The beginning of our physical life is the day of our birth, but the beginning of our professional life is the practical commencement of our professional studies. Such the first of October will be to you.

Judging from the number of letters that we receive on the subject, the most important question in the mind of the student is his selection of the school and hospital at which he is to study. This selection may, and will, no doubt, be influenced by various circumstances. The son will naturally choose the hospital at which his father was educated; personal knowledge of some of the lecturers will influence another student, whilst locality, or "peculiar advantages" for study, may influence another. But provided a student has a due regard to time in the pursuit of his studies, it is really at the present day of little importance at which institution he "enters." Time is all-precious to him; he must not live too far away from the lecture-room or hospital, nor must he attend lectures or hospital practice at places at great distances from each other. Bearing this in mind, he will find at every medical school in London or the country, sufficient means and opportunities of acquiring a perfect knowledge of his profession. He must remember that his success, or non-success, will mainly depend upon himself; he may be aided by the instructions of others, but his real position must be made by his own exertions. DEMOSTHENES made oratory to consist in action; the watchword of the medical student should be Industry. This industry must be exercised on practical points and subjects. Fanciful and speculative pursuits are inimical to the proper study of medicine, to which facts are essential. It is in the dissecting-room, the laboratory, and at the bedside, where alone the future practitioner can fit himself for his duties. His dissections must be

his own; the lecture, the demonstration may assist him materially; but to know anatomy practically, and as a surgeon, personal experience is essential. Not only does the use of the scalpel teach him regional and surgical anatomy, but it gives him a facility in handling the knife which, when he comes to be an operator, he will find of immense advantage. Indeed it is in the dissecting-room that the surgeon "educates his hand," as the late Mr. LISTON well expressed it. Chemistry must be studied practically, also, to be of use in after life, and it is rather in the laboratory than in the lecture-room that this is to be done. It is unnecessary to dwell upon the value and importance of the other branches of medical science to the student. To practise rationally, and not as an empiric, he must possess a good knowledge of physiology, pathology, therapeutics, and the collateral branches of medical science. Let him always remember that the main pursuit of his life is to alleviate suffering and cure disease, and that the means of enabling him to do so must, if he aspires to be anything better than an empiric, be fortified by a thorough knowledge of the human frame in its healthy and abnormal conditions. This knowledge will avail him at the bedside when he comes to observe disease in its various forms.

The student of the present day possesses advantages in respect to clinical instruction which could not be obtained by many of his predecessors. When THE LANCET was first published, there was not a clinical lecture given in London; now there is not a medical school in which they are not as regularly delivered as the systematic courses on the different special subjects, and they are an essential part of the curriculum required by our examining boards. Such a revolution is the best possible proof of the great and acknowledged importance of this form of medical instruction. But even now clinical study is not carried out in this country as it ought to be, neither on the part of teachers nor students, and this cannot but be a matter of regret to all who, like ourselves, are convinced of the paramount importance of clinical teaching. Clinical appointments are not sufficiently numerous, the students are not brought into sufficiently personal and intimate relations with the sick in the wards; the clinique is too hurried, too much *en masse*: not a case should enter the hospital that is not brought home to the students, not a student should leave the hospital without having discharged clinical functions. It is at the bedside, and the bedside alone, that you can prepare yourselves for the bedside; one case well watched from beginning to end is worth a dozen systematic lectures. It is the thing itself; it is seeing what you will have to recognise, and what, without seeing, you never would recognise; it is enabling you to watch the treatment of that, the responsibility of the treatment of which you will one day have thrust upon yourself; it is enlisting your interest, your sympathy, your suspense, your efforts, everything that can help to impress you in that which is teaching you; it is

disease itself teaching you instead of a teacher interpreting disease. Get then as much clinical experience as you possibly can; be covetous, and even greedy of it. Begin at once your clinical studies; do not, as is very often done, neglect the hospital wards for the first twelve months, but give, from the very beginning, a certain portion of the day to the study of the cases in the wards. You will have plenty of time; whatever else you do, be sure that the hour or two spent in the wards will be the most precious and profitable of all; neglect anything rather than that. Three years will not be found too long a period for observation. We have known many hard-working studious men who have thought that the most profitable employment of their whole time of study is to lay in exclusively, at first, a stock of the theoretical knowledge, and then on that to build the practical; but they confessed their error afterwards. Begin, then, we would say, your clinical education at once.

With regard to clinical study, also, we would say, *do not be specialists*; do not restrict yourselves to the watching of surgical or medical cases exclusively. This is an error very apt to be committed, and very prejudicial it is; it produces imperfect, ill-informed men, that make neither good surgeons nor physicians; for, independently of that large class of cases that lie in the border country between medicine and surgery, how often medical cases require surgical knowledge, and surgical cases medical treatment. The two subjects cannot be practically divided; the body is one, the laws of life and health that are disturbed in the two classes of cases are the same. Again, be less ambitious of seeing a large number of cases than of seeing a few thoroughly; beyond a certain point, numbers are a disadvantage; you should never have more under your observation than you can remember, and keep distinct in your mind and think over. A young physician once told us that he gained more knowledge when he was a clinical clerk, and had only fifteen cases under his observation, than when he was a house-physician and had sixty; because, of the fifteen he could keep daily records that his mind could grasp—could think over; but the sixty were too many for this, and the majority of them failed to minister to him any permanent instruction, and to become the lasting occupants of his mind. Again, watch your cases closely; do not let a day pass without seeing them. Sometimes a single omission breaks the thread of events, and destroys both the interest and instruction. Never think you know anything about cases till you have taken notes of them; not only will you not remember them unless you take notes, but you will not know them so well, so certainly, so thoroughly in the first place. The "taking" of cases suggests all sorts of questions that you would not otherwise ask: it makes you painstaking, observant, precise. Writing, as BACON has said, makes an "exact" man. A very good plan is this: Examine the cases you are going to take notes of sufficiently to verify the diseases; then read the sub-

ject up at home; then, having got the subject well up, take your notes; you will then know what to look out for—what questions to ask, what symptoms are regular, what are exceptional, and every symptom and feature of the case will have a value and interest—a relative or comparative interest, and will be infinitely better remembered than if it stood alone as a simple, absolute fact. In this way your reading will give you eyes to see your cases, and your case-taking will supply you with examples to illustrate and vivify your reading. This is, perhaps, the best of any way of acquiring a real knowledge, literary and practical, of your profession.

In no respect, probably, does the study and practice of medicine of the present day differ more from what it was a few years ago than in the means which modern science has placed in our hands for the observation and investigation of disease. And no doubt in this respect we possess an immense advantage over our predecessors.

Whatever may be the advantages of the test-tube and microscope,—and few will deny that they are great,—it must be recollected that these are the finishing acquirements of the physician. The great "land-marks" are not to be neglected for these minor guides. There is at the present time too much disposition to refine and sublimiate, as it were, medical studies. BAILLIE described the successful practice of physic as "the exercise of the natural sagacity of a man of competent acquirement;" and there can be no doubt of the truth of the axiom. Let, then, the study of minute anatomy, and microscopic and test-tube investigation, be as the useful ornaments on the Corinthian column; but let the base and the pillar be made of the more weighty material, to carry on the simile, of practical anatomy and bed-side observation.

Prizes have their disadvantages: they are too apt to lead the student to exhaust his energies on one or two subjects, with a view to obtain the "glittering bauble," which, when purchased at such a price, is worse than useless. Prizemen are by no means necessarily the best after practitioners, or the best educated students. On the contrary, some of them are possessed merely of a capacious memory, and are deficient in the higher attributes of intellect. A sound knowledge of the profession in all its branches is the real necessity of the student; and if he would succeed, he should not, at the risk of falling short on other subjects, compete for a "prize," which however fair and flattering to the view, is often, in reality, a hollow and empty honour.

And now remember, that in entering on your student career, you are being put upon your great trial; the next six months will be the test that will show what stuff you are made of. You will now be subject to influences to which you were never exposed before, and deprived of guides and checks upon which, hitherto, you could fall back, but of which you never yet stood in so much need. All sorts of temptations, both to pleasure and in-

dolence will assail you and you will have to meet them single-handed; for you will most of you, in coming to London, or any other of the great towns in which the medical school is situated, lose the potent and restraining, but wholesome and delightful, influences of home, parents, and friends. You will have no one now to fly to in an extremity, except one friend, who will never leave you and never deceive you, who will never play you false, not even if you are false to it,—that *aliquid divini particulam*, that single vestige of our divine original,—conscience. Happy the man who has a home in London! happier still the man whose domestic affections, with all their purifying influences, are so inwrought in his nature, that he carries his home with him wherever he goes! Depend upon it, until you come to London and stand alone you are untried men; depend upon it, too, that the next six months will be the turning-point of your professional life,—and with the cast of your professional life how much of your moral and physical and domestic life is involved! What your next six months will be, that your whole student-life will be; and what your student-life in London is, such will be your future professional career. It is hardly too much to affirm this. We know that men sometimes imagine that they are going to sow a few wild oats at first, and waste a few months, and then be very steady and industrious afterwards. But it is all a delusion—all moonshine—they never do it! It is very rare for a man who begins well to end badly; rarer still for a man who begins badly to end well. If you can, next March, look back on six months in which you have learned “to scorn delights and live laborious days,” you may make your minds easy as to the future. The man who has once tasted the delights of study, and the sweets of success, will never be satisfied with pleasures of a lower order. But if that period is spent in blunting and deadening the sense of what is right, and in a constant disregard of the monitions of conscience; if it is spent in discounting the future for the sake of the present, daily adding to the lee-way, postponing for the future an impossible amount of work, and throwing the weight of habit into the wrong scale, you will be placing yourselves at a terrible disadvantage for the future, and will be accumulating great and daily increasing odds against your ever either loving or knowing your profession. The difficulties that beset the first year's student are very great, and it is not by disguising or ignoring them that we shall prepare you for overcoming them. There are the difficulties of the subjects of study themselves, the difficulty of self-distrust so common with students at first, the difficulty of eradicating old habits and forming good new ones, the difficulty of keeping up hopeful and energetic work through a long probation, the difficulty of resisting temptation.

“Would you, then, learn to dissipate the band
Of these huge, threatening difficulties dire,
That in the weak man's way like lions stand,
His soul appeal, and damp his rising fire!
Resolve! resolve! and to be men aspire.”

Exert that noblest privilege, alone
Here to mankind indulged—control desire;
Let godlike Reason, from her sovereign throne,
Speak the commanding word, ‘I will!’ and it is done.”

The remedy is as simple and as certain as the difficulties are many and great. Stick to your books, your lectures, your dissections, your hospital practice, “with a will,” and the thing is done; half the difficulties will immediately vanish, and the other half will soon yield. You will have to draw on your faith, your hope, your resolution, your mental abilities, your physical powers; but do not be afraid of “over-drawing” yourselves. There is not one of you, not one of all the first-year's students who commence their studies this year who may not, if he chooses, attain to all that a reasonable ambition could desire. This is not a mere form of words; it is simple unimaginative truth. Nay more, although the wealth and honour of medicine are generally reserved for distinguished ability, the real prizes of the profession—a sufficiency in its material rewards, a constant sense of usefulness, the respect of your fellow-creatures, studies of the most delightful kind, containing material of inexhaustible interest—these are open to all. Remember, then, the critical importance to you of the next six months, remember your difficulties, and remember their remedy; and remember, too, that if there is one thing in this world that is perfectly certain, it is, that a pupilage of diligent study is the introduction to a life of successful practice.

News Items, Medical Facts, &c.

STRYCHNINE AND ITS EFFECTS.—On Monday afternoon last, a valuable greyhound bitch, which had been entered for the Dumfriesshire St. Leger, belonging to a gentleman residing at Corbelly-hill, was killed by partaking of strychnine. The bitch had been allowed to run about the locality for a few minutes, while her owner was at tea; but she immediately returned to her kennel, howling most piteously. The gentleman at once left his meal for the purpose of ascertaining the cause of the noise, when he found the animal standing upright in a perfect state of rigidity, and apparently enduring great agony. He dispatched a messenger for Mr. Paterson, veterinary surgeon, who was in immediate attendance, and at a glance pronounced the dog poisoned by strychnine. Chloroform and other antidotes were applied, but all failed; and the animal, after having undergone a series of violent convulsions, expired in about an hour and a half. In the same locality, a few weeks ago, another dog, belonging to a lady, died in a similar manner; and the people in the neighbourhood are so much alarmed that they will not even allow domestic animals to leave their houses, lest they should suffer.

ANÆSTHETIC SUBSTANCES.—Our readers may recollect that a few months ago amylene was re-

commended as preferable to ether and chloroform in producing stupefaction or anaesthesia, on the special ground that its employment was unattended with danger to the patient, or nearly so. MM. Foucher and Bennet have, however, in a recent communication, addressed to the Academy of Sciences, recorded facts leading to quite a contrary result. In twelve experiments performed on rabbits they have ascertained that the anaesthetic effect of amylene is produced within from three to six minutes after its application. Before stupefaction is produced, the animal utters piercing cries, and throws its head backwards; its breathing is accelerated, the globe of the eye is strongly injected, and moves convulsively; a tracheal hoarseness always accompanying the above symptoms. The period of insensibility does not last long if the application of amylene be not continued; in the contrary case, however, a complete collapse takes place; the animal, stretched out without motion, obeys every impulse of the hand, and resembles a flabby mass in which breathing is hardly perceptible. This state may last twenty minutes without causing death. The blood drawn from the arteries during this period still preserves its usual colour. Animals subjected to the action of amylene for a certain length of time continue after the operation in a state of stupor and imbecility, which sometimes lasts seven or eight hours; but in none of these cases observed by the authors of the communication has death followed the application of amylene. The conclusions resulting from their experiments are as follow:—1. Sulphuric ether, chloroform, and amylene are, of all volatile substances experimented on, the only ones that produce anaesthesia. 2. Amylene does not produce stupefaction unless the quantity of air with which it is diluted be very small; but then it acts upon the animal economy, and especially upon the respiratory organs in a manner which may produce dangerous effects. 3. Chloroform has all the advantages of amylene, without the evils which accompany the use of the latter. 4. None of the substances above-mentioned produce anaesthesia, whether local or general, when applied to any peculiar part of the body by injection under the skin.—*Galignani's Messenger*.

THE INDIAN MUTINY.—The following is an extract from a letter from the medical officer in charge of the Goorkha force marching towards Lucknow. Major Holmes accompanied the writer for two or three days from Segowlie, and was murdered the day after his return.

“Goorkha Camp, Kuroona, July 30th.

Here we are, and I am well, and that is about all I can say. We have had a terrible outbreak of cholera; many hundreds of cases, and vast numbers of deaths. I have had no help, almost no medicines, and no hospitals; the men lie on the wet ground; they have almost no covering, no proper food, and no attendance at all. This is an out of the way place, thirty miles

from Goruckpore and sixteen from the river Gunduck, which was an obstacle of four days to our march. The elephants swam over, but the river was three and a half miles wide, running a torrent, and we had only twenty-five boats for all the men and baggage,—6000 men (3000 soldiers and 3000 camp followers), 450 carts, with 900 bullocks and 250 horses. I don't believe we are destined to see any active service. I think they will never be mad enough to trust such a set of barbarians in the field. They will do the work of destroying villages and settling disturbed districts well enough. They suffer much from the heat; quite as much as we do. They march with umbrellas, and often with fans. They have no notion of keeping together, and are the dirtiest set I ever saw in my life. They eat ravenously, and their food is uncooked, or nearly so. They take no care or notice of their sick, 400 of whom we had to leave on the other side of the river. We are living (three of us) in tents, amid hordes of all kinds of vagabonds; but externally, at least, all is quiet about here, and the name of these Ghoorhas may possibly do a good deal.”

INTERESTING CASE OF TRANSFUSION OF BLOOD.

—This operation was successfully performed on the 16th September, by Mr. Wheatecroft, surgeon, of Cannock, Staffordshire, on the person of a woman named Wood, residing there. After her accouchement, fearful hæmorrhage set in, draining the woman of blood. She felt herself dying, and summoned her husband to her bedside, bid him “Good bye,” and earnestly requested him to take care of the children when she was no more. She then became pulseless and gasping, occasional breathing being the only indication of life. A vein was opened in her arm, and one in the arm of her husband, and as the blood flowed from the latter it was transmitted by suitable apparatus into the veins of the wife. After seventeen ounces had been thus injected the pulse became perceptible, the colourless lips reddened, the glassy eyes brightened, and she thankfully said, “I am better.” The case has progressed very favourably, and the woman is recovering.

THE INDIAN MUTINIES.—The following medical officers have perished in the disastrous revolt in India:—Surgeon Henry Hawkins Bowling; Dr. Carl Barielly Buch; Assistant-Surgeon Anthony Dopping; Assistant-Surgeon Joseph Fayrer; Superintending-Surgeon James Graham; Assistant-Surgeon John Colin Graham; Assistant-Surgeon George Hansbrow, formerly one of the Students in Human and Comparative Anatomy at the Royal College of Surgeons of England; Dr. John MacDowall Hay; Dr. E. M. Augur James; Surgeon Kinloch Winlaw Kirk; Assistant-Surgeon John Kirk, M.D.; Dr. Robert Patna Lyell; Surgeon Moore, 60th Rifles; Surgeon Richard Henry Oakley.

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The following is a list of the principal Granules and Dragées that we prepare.

	How Put Up.	No. of Dragées in each Box or Bottle.	Quantity of active substance in each Dragée.
agées of Santonine,.....	in Boxes,...	40	1 grain,.....
" Lactate of Iron,.....	" "	130	1 grain,.....
" " " " " " " " " "	in Bulk,.....		1 grain,.....
" Iodide of Iron,.....	Bottles,.....	100	1 grain,.....
" " " " " " " " " "	in Bulk,.....		1 grain,.....
" Carbonate of Iron,.....	Bottles,.....	130	Vallet's Formula.....
" " " " " " " " " "	" "	130	Bland's Formula.....
" Citrate of Iron,.....	" "	130	2 grains,.....
" " " " " " " " " "	in Bulk,.....		2 grains,.....
" Quevenne's Iron reduced by Hydrogen,.....	Bottles,.....	100	1 grain,.....
" " " " " " " " " "	in Bulk,.....		1 grain,.....
" Carbonate of Manganese and Iron,.....	Bottles,.....	130	1 gr. Carb. Iron, 1 gr. Mangan
" Tartrate of Potassium and Iron,.....	" "	130	2 grains,.....
" Rhubarb and Magnesia,.....	" "	130	1 grain of each,.....
" Sulphate of Quinine,.....	in Bulk,.....		1 grain,.....
" Pills, Aloetic, U. S. P.	" "		2 grains,.....
" " Aloes and Assafoetida " " " "	" "		2 grains,.....
" " Aloes and Myrrh, (Rufus' Pills,) U. S. P.	" "		2 grains,.....
" " Assafoetida, " " " "	" "		2 grains,.....
" " Opium, " " " "	" "		1 grain,.....
" " Compound Cathartic, " " " "	" "		1 1/2 grain,.....
" " Compound Calomel, Plummer's Pills, " " " "	" "		1 1/2 grain,.....
" " Calomel, U. S. P.	" "		2 grains,.....
" " Dinner, (Lady Webster's),.....	" "		1 1/2 grain,.....
Use Pills,.....	in Bulk,.....		3 grains,.....
" Pills, Opium, et Acet. Plumb,.....	" "		Each 1 grain,.....
" Extract of Ratanhy,.....	" "		Each 1 grain,.....
" " Copaiba, pure solidified,.....	Bottles,.....	72	10 grains,.....
" " Copaiba and Cubebs,.....	" "	72	10 grains,.....
" " Copaiba, Cubebs and Citrate Iron,.....	" "	72	10 grains,.....
" " Cubebs and Alum,.....	" "	72	10 grains,.....
" " Cubebs, Ratanhy, and Iron,.....	" "	72	10 grains,.....
" " Cubebs, pure,.....	" "	72	10 grains,.....
Extract of Belladonna,.....	Bottles,.....	100	1-5 grain,.....
" Hyoscinamus,.....	" "	100	1-5 grain,.....
" Ipecac,.....	" "	100	1-5 grain,.....
" Opium,.....	" "	100	1-5 grain,.....
Digitaine,.....	" "	60	1-50 grain,.....
strychnine,.....	" "	100	1-50 grain,.....
Veratrine,.....	" "	100	1-50 grain,.....
Morphine,.....	" "	100	1-50 grain,.....
Arsenious Acid.....	" "	100	1-50 grain,.....

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THOMAS WAKLEY, SURGEON,

M.P. DURING EIGHTEEN YEARS FOR THE METROPOLITAN BOROUGH OF FINSBURY,
AND CORONER FOR THE COUNTY OF MIDDLESEX.

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J. H. BENNET, M.D. T. WAKLEY, JR., M.R.C.S. & F.

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IN TWO VOLUMES ANNUALLY.

VOL. II.

NEW YORK, DECEMBER, 1857.

No. 6.

Introductory Lecture,

DELIVERED AT

ST. THOMAS'S HOSPITAL,

On Thursday, October 1st, 1857,

By WILLIAM BRINTON, M.D.,

LECTURER ON PHYSIOLOGY AND FORENSIC MEDICINE TO THE
HOSPITAL, AND PHYSICIAN TO THE ROYAL FREE HOSPITAL.

MR. PRESIDENT, LADIES, AND GENTLEMEN,—As Dean of the Medical College of this Hospital, I have to offer some remarks introductory to the business of the ensuing session.

On occasions of this kind, custom and common sense alike sanction a departure from that strict adherence to a specific subject which a lecturer must generally observe. A meeting like the present brings together an audience, the various members of which may indeed be associated by a common interest in medical science, but are, in most other respects, very diverse from each other. There are many here before whom I would far rather be listening than speaking; many whose presence dignifies our inaugural meeting, but whose knowledge is not likely to be increased by anything I can say. There are others in whom I recognise students of the last session, who have returned to their studies, after a few weeks of absence, devoted (as I am glad to see their countenances suggest) to that physical recreation so essential to health. And lastly, there are others who are (in ordinary phrase) new students—new, perhaps, to this bustling metropolis, to the "*fumum, et opes, strepitumque Romæ*"—new, probably, to most of the details and associations of the profession they have chosen; and certainly new to the steps by which they are just about to enter on the path which, if rightly followed, will conduct them, honourably and safely, to that station in life to which (in the

words of a good old English book) it has pleased God to call them.

If I wished merely to interest such an audience, I should not wait long for a subject; or if I did hesitate, it would be in the proverbial embarrassment of choice. It is the especial character of the science of Medicine, that it interests all classes; and that, even if we may not claim for it in its original meaning, the celebrated dictum, "the proper study of mankind is man," we may at least assert of it, that, in some form or other, it is essential to the application of all kinds of knowledge, and reacts upon every subject of scientific inquiry. Hence it would be easy to select a variety of medical topics, any one of which could scarcely fail to be both interesting and amusing. Even amongst the more recent acquisitions of Medicine are many which might well suggest an introductory address. Nor would such be really irrelevant to the purpose of this evening. "*Ex pede Herculem*," I might say. Judge, from the magnitude and vigour of this or that limb or fragment, how vast is the outline, how gigantic the force, of the whole body of Medical Science;—of that Science which a few of us attempt to teach; which many of us (lecturers as well as students) spend our lives in learning; and lastly, which all of us, with scarcely an exception, must one day invoke, to postpone or lighten the sufferings of disease and death.

But I venture to claim your indulgence for some remarks which, though less attractive, will be more useful, and which, though addressed to what is but a fraction of my audience, may yet have some interest for the remainder. Considering the value of first impressions, the need of definite information (if only as a basis for a fixed plan of action), and especially the circumstance that this, the fittest, is also the only opportunity which the arrangements of a Medical School afford for an exposition of its rules and working, you will scarcely blame me for making my address *introductory*, not only in name, but in fact. And if

it should aid those whom it introduces to their studies to begin them aright, or those who recommend them to scrutinize and measure their previous conduct and progress, I am sure the remainder of my hearers will forgive me if I accord them but a subordinate share in my attention, and rely rather upon their own kind feelings than upon any remarks of mine for the sustenance of that hearty interest in this Institution which they are evincing by their presence to-night.

To you, the new students, I therefore address myself, with the intention of setting before you, as briefly and practically as I can, what seem to me, after fourteen years' experience as a student and teacher, to be the most important features of that course of study on which you are about to enter.

Foremost amongst these is the very magnitude of your task.

Your student-life will probably include about twenty-seven months of actual study. In this period you have to acquire an insight into four great branches of Natural Science, either preparatory or ancillary to Medicine: Anatomy, Physiology, Chemistry, and Botany. You have also to obtain a facility in the practice of certain mechanical arts, having a similar relation to the cure of disease: Dissection and Practical Chemistry. Lastly, you have to acquire a full and technical knowledge of the art and science of Medicine, in its three chief subdivisions of Physic, Surgery, and Midwifery; as well as of certain parts of it which elude classification under these three heads, and therefore claim your separate attention as *Materia Medica* and Forensic Medicine. And all this in twenty-seven months—in a period of time less than what the best authorities tell us is requisite to convert a ploughboy into a soldier; in other words, less than what is requisite to teach a healthy young man of your own age to control his muscles, so as accurately to execute a series of movements, which (in one form or another) he has previously been obliged to practise from his earliest infancy.

And now let us inquire, what appliances do you bring to such a task? Energy, resolution, enthusiasm, I doubt not; for it is not the character of your age and nation to lack these prime qualifications for success. Doubtless, also, many of you possess a fair share of what is usually implied by a liberal education, as imparted in the best private and public schools of this country. But I may probably assume that many of you have *not* undergone the hard training necessary to form a student: the practice of concentrated, steady effort which ensures success in all departments of knowledge; the mental gymnastics which, in the shape of the exact sciences, strengthen the mind to wrestle with fallacies and errors. Nay, more; I suspect that even amongst those who have grasped these invaluable results of mental exertion, some have perhaps lost, in the solitary or excessive study of books, that delicacy and keenness of observation, that accuracy of eye and ear, perhaps even that healthy concord of faculties,

which are sometimes associated with a strong repugnance to much reading, and which are so indispensable to the successful study of medicine. Already, I dare say, your members include some whose antecedents have thus disposed them to lay undue stress on one of these two great means of learning your future profession—reading and observation; and who, perhaps, instead of deploring their dangerous one-sidedness of intellect, secretly regard themselves as therefore destined to achieve peculiar success in the science or the art, the theory or the practice, of Medicine respectively.

This difficulty, then, it behooves you to recognize at the outset of your career:—that with less preparation by academic training than would generally be the case, if you were about to study for the Church or the Bar, you are commencing a series of technical studies, the extent and depth of which not only transcend anything requisite for the practice of these two callings, but are quite without parallel in any profession, in this or any period of the world's history.

I state this fact advisedly, and without any fear of contradiction. And amongst the many conclusions deducible from it, I will select one, which is deeply impressed on my mind. That, as the progress of physical science adds, day by day and year by year, to that large mass of information which the practitioner of Medicine has to acquire, it becomes more and more important for the student, either to extend his period of education, or at any rate so to arrange his studies, and to economize his time, as to compensate for these increasing requirements. Above all, he must be increasingly jealous and watchful, lest, in grasping at accomplishments, he lose essentials. He may possess good abilities, may study diligently, may even confine himself to the subjects prescribed for him, and yet it cannot be too distinctly appreciated, that if he studies these subjects in undue proportion to each other, or out of their proper order, his toil may be thrown away; and he himself, on entering practice, reduced to that peculiar variety of professional education which is one of the chief objects of Institutions like this to suppress—namely, that of learning practical Medicine and Surgery at the expense of his earliest patients!

Is there any practitioner here who cannot, from his own reminiscences of student life, recal various instances of this kind? Is there any Medical School, the annals of which, if laid open, would not exhibit the lamentable shipwreck of many a student who began as full of hope, and resolve, and promise, as those I am now addressing, but whose intentions melted away under the bewilderment produced by the magnitude and complexity of his task? He has attended, let us suppose, the inaugural lectures of several Professors, each of whom has very naturally insisted on the paramount importance of his own subject. On inquiry, he finds that he must attend daily four or five lectures of an hour's duration; that he is expected to devote all his morning to dissection, his afternoon to hospital practice, the evening to his

books and notes. Are the authorities (he asks himself) aware how many hours there are in a day, or how many days any human being could attempt to satisfy these impossible requirements? Then, very likely, his conscience intimates that it does not follow that, because he cannot do everything, therefore he shall do nothing. So he stills this monitor by selecting for exclusive attention some one or two subjects, perchance of but secondary importance. Perhaps the arrangements of his College do not render this conduct at all incompatible with the attainment of its prizes and distinctions; so that, after thus virtually wasting three or four sessions, he gratifies his friends, and dazzles his future patient, by the glittering trophy of a medal in Botany or Comparative Anatomy—a poor substitute for professional skill; a poor counterpoise for the weight of misery—the widowhood, the orphanage, the childlessness—his ignorance of practical Physic and Surgery must assuredly inflict. Oftener, perhaps, his bewilderment ushers in a moral lapse, and leads him to complete idleness. He falls into irregular desultory habits; wanders from one lecture to another; from Surgical to Medical wards, with a vulgar laxity of attention that soon renders him familiar with everything, acquainted with nothing. His only care is to qualify for his certificates of attendance. His only hope, to receive, from the process known as “grinding,” that superficial smoothness and temporary sharpness which such a term seems to imply, and which may enable him to cut his desperate way through the difficulties of his final examinations. His fear is equally ignoble:—not that greater fear which ought to include all lesser, the dispensing of disease and death, in place of life and health, to those who hereafter claim his services; but only that detection of his incompetency which the public has a right to hope. Already, by anticipation, he cowers under the pangs of that mysterious operation, the risk of which he shares with his prototype among the domestic poultry, the “plucking,” which, whatever its metaphoric terrors to the ancient Roman, has an equally terrible, though more restricted, sense to the idle English student.

Doubtless, much of this picture applies rather to the past than to the present. At any rate, physical impossibilities are now scarcely demanded of the student by the programme of any Medical School. But as to intellectual ones, I am not sure whether his risk is much diminished, whether it is not even increasing, as it becomes less obvious. There are so many specialties on which instruction is eagerly proffered to the student, so many accomplishments which are (and most truly) represented as useful to the practitioner of Medicine, that there never was more need of calling attention to the primary importance of those subjects which form the recognised course of study. And of these I beg you to believe that, what between their nature, and the circumstances required for their successful teaching, you must learn them now or never. Attend,

therefore, to these subjects first. Resist the fascinations of every study, however desirable or useful, that would withdraw you from them. Recollect that if you really intend to practise your profession, common honesty requires you to master these subjects reasonably well, before passing on to any mere accomplishments; and that the reversal of this rule may not only destroy your usefulness, but injure your integrity and self-respect; may make you, as it were, a kind of medical Pharisee—“taking tithe of mint, and anise, and cummin, but omitting the weightier matters of the law—justice and mercy” to the sufferers whom you pretend to pity and relieve.

Dissection, the first of these subjects in the order of importance, I shall say little about. Awful as it is to stand day after day in the presence of the dead, and watch the repulsive and unwholesome process by which the human body returns to earth again, the necessity of dissection is no longer questioned by any civilized nation. Every sane person must acknowledge that an artisan cannot be expected to correct the derangements of a machine if ignorant of its structure; and that our limited knowledge of the human frame, and still more limited power over its derangements, do not prevent the application of this common-sense rule. But, indeed, no analogy of this kind approaches the whole truth. To say that a physician or surgeon ignorant of Anatomy is like a man professing to mend watches without ever having opened one, or like a traveller wandering through an unknown country, greatly understates the absurdity of such medical pretensions. It is only by imagining the watch-mender ignorant of all machinery, and devoid of proper tools—only by supposing the traveller ignorant of all geography, not knowing a mountain from a valley, and without compass or stars to steer by—that we can parallel the imposture of Medicine without Anatomy. And, on the other hand, we may usefully contrast the large advantages Anatomy brings to Medicine with the disadvantages so acutely felt in other professions, the active efforts of which are based on analogous information. How imperfectly, by comparison, do the painter and sculptor study the body they image or depict; how scanty the information, as to that body in general, which they must deduce from the casual peculiarities of the few individuals they draw or model with such tiresome repetition. How heavy, again, are the responsibilities thrown, by the scantiness of his information, upon a general in a campaign; marching and fighting, it may be, in a country he has never seen before, with slender knowledge, acquired by danger, clouded by suspicion, or disguised by wilful falsehood! But the physician can become acquainted with the body which is the subject of his art in all its varieties of health and disease, of age, sex, and conformation; and may thus learn to direct his gaze, as it were, through skin and fascia and muscle, down to the very organs of central life. And the surgeon, as he battles for the welfare of his patient in some hazardous operation, may

enjoy, as a matter of course, the inestimable advantage of a battle-field which he has already studied expressly as the future scene of such a conflict—an advantage such as, but once or twice in the world's history, has ever been afforded to the eagle glance of military genius!

It is not for me to point out the risks of this study, or the details which most demand the attention of the student, at different stages of his course. But when I remind you of its threefold object—that you must dissect to learn the situation, as well as what I may term the landmarks, of the vital organs most concerned in the practice of Physic; to recognise the structures amongst which Surgery finds its occupation; and lastly, to gain the operative skill which is only thus to be acquired—you will understand why this practical and personal instruction in Anatomy claims so much of your time, and why it comes foremost in the thoughts of a medical teacher, whatever his own special department of instruction. Without it, you cannot even begin to acquire a knowledge of many other subjects. And hence it must be looked upon as your earliest and chief object, valuable not merely for its own sake, but as being the very fulcrum of all your subsequent efforts.

Lectures, again, demand an equally large share of your attention, and have a bearing upon your professional education which cannot be too distinctly understood. Of course, as they are not only sanctioned, but required, by the various Examining Bodies, I need not bring forward persuasives to attend them. Indeed, recollecting the fable of the currier in the besieged city, I feel that, as a lecturer myself, it is not for me to speak strongly in their favour. I would rather take the opposite course, and place before you, candidly and explicitly, the lowest estimate of their value. In doing so, I shall probably forewarn you against errors which might otherwise be injurious to your future industry and progress; and shall at any rate be able to indicate some of the means by which each of you may best fulfil, with respect to these lectures, the common-sense duty "*uti quibus habetas*." Whatever may be the precise value of lectures, I cannot doubt that you intend to accept and use the knowledge they proffer. And on this assumption, it is easy to show how you may not only seize all their advantages, but may even turn to your own profit any casual disadvantages they involve.

Those who disparage lectures insinuate that their value is almost limited to two circumstances—that they ensure the bodily presence of the student, and then force through the organs of hearing a minimum of information on certain medical subjects; and thus, in direct contradiction to the proverb, not only bring the horse to the water but also make him drink. "A student who really deserves the name," say they, "can be far better occupied than in attending lectures. Besides, medical schools are absurdly numerous, and to expect that every able physician or surgeon must be, *ipso facto*, an orator, is scarcely less un-

fair than the popular assumption that every clergyman, whatever his gifts or defects, must rest his chief claims to usefulness on the same character. The mere matter of medical lectures, too, is often inferior to that of the best authors on the subject—sometimes little more than a partial or imperfect abstract of one or two well-known books. The lecturer, again, goes through his discourse rapidly and at once, while it is the reading and re-reading, the line upon line, and precept upon precept, the slow digestion of a moderate amount of information, and not the hasty cramming of a large quantity, which nourishes and builds up the student's mind."

Respectable fallacies like these always entangle and enclose a certain proportion of truth, which is the bait that secures their acceptance,—or rather the salt that prevents their putrefaction.

But to extract and display what is true in the above statements would lead us, far away from our present subject, into a discussion on the relative merits of the Tutorial and Professorial systems, and on the still more embarrassing topic, whether the present method of medical education affords the best adjustment and combination of the two. Now, though it seems certain that changes are imperatively called for, that it is no more possible to prevent some of these changes than to hinder the sun from rising to-morrow, and that it depends mainly on its conduct in reference to such improvements, whether any particular Institution is to rise or fall, yet it would obviously be both useless and improper to dilate upon them here. It is enough if I point out whatever errors in the above statement concern your studies, or threaten your progress, under the existing system.

First, then, pray observe that this opinion disparages, not only the lectures and the lecturer, but also the student, whose capacity and ability to profit by what he hears are at least equally called in question. This depressing opinion as to your incapacity we need not, however, discuss. For it is not only untrue, but, even if true, you could easily refute it by a little extra industry.

Next, let me confess that, as a medical teacher, I am always alarmed when I hear of statements which, like the above, parade (as it were) a *model* student, in whose behalf everything is supposed to be done. There is so much variety of mental organization, that it is, I think, neither wise nor kind to set up any particular standard; and thus to excite the self-complacency of one class of students to the undue discouragement of others, who, with reasonable industry, may ultimately become quite as useful members of the profession. Indeed it ought to be distinctly understood that the true model student, in our profession, is something very unlike what would be popularly conceived of under this title. And taking words in their ordinary sense, I beg to add, that the usefulness of lectures must not be tested by the influence they exercise on the development of what is termed a genius, or even on the formation of a model student. As regards the first, a

genius is apt, I fancy, to make his way over or through all obstacles, with resolution and success only enhanced by them. And proud as every institution is of having had such amongst its *alumni*, it is neither by their number nor their eminence that its usefulness is best certified and measured. The first object of a Medical School is, not to permit or encourage the evolution of an occasional genius, but to fulfil its implied contract with the public, the profession, and the pupils: to send forth into the world a number of men, who by careful teaching, and by fair abilities and industry, have learned to be efficient practitioners of Medicine. And it is, so to speak, precisely by the per-centage of these on the total number of students that I should gauge the efficiency of any such Institution.

If, therefore, it can be stated, that lectures, as compared with books, appeal to larger numbers, and influence the minds of these more completely, it would be a sufficient defence for them as one chief means of medical education. Now, there cannot be a doubt that they do this; and that the educated public finds, by increasing experience, that even what may fairly be denominated light literature is far better comprehended when heard in a lecture than when read in a book. The lecture, entering the mind by what is a natural, and not an acquired, channel of thought, is received more easily, comprehended more thoroughly, and retained more firmly, than the book; especially where time, and place, and circumstance, and the strong mutual sympathy of numerous attentive listeners, conspire to aid this natural result of our physical and mental constitution. And to quote the old adage, "*Segnius irritant animos demissa per aures*," is a mere sophism when the "*oculis subjecta fidelibus*" are printed types, the inadequate representatives of ideas, and not (as the words really imply) natural objects themselves.

In another point of view they are almost equally important: namely, as a counterpoise to merely bookish habits. No doubt there are idiosyncrasies which reverse the above rule, and read more quickly and easily than they hear. But I am not sure that they ought to be your model, far less your standard. On the contrary, it is neither to be expected nor wished that each of you should become what is conventionally associated with the idea of a hard student; that you should wander about the Hospital, wrapt in moody abstraction, with pallid ghostly faces that tell of the midnight oil, or suggest any dislike to fresh air and exercise. To speak more seriously, exertions of this exclusive and excessive kind, always prejudicial to the student's brain as well as his body, are doubly unwise in the student of Medicine. It is not to be crammed with information that you come here. Far from being satisfied with a seat in your memory, the profession you have chosen demands every sense and faculty of mind or body. The higher mental qualities—comparison, reflection, judgment—are just as essential as the lower of mere intelligence, and

must be daily and hourly exercised now if they are to serve you efficiently in after-life. And your bodily senses are no less important: the hand, the eye, and the ear—all have a great deal to learn; and their training takes an indispensable share in your professional education. Perhaps such a statement is in some sense true of every active calling which mixes man with the physical world around him. But it is eminently so of Medicine, which peculiarly demands a happy proportion of all faculties, rather than an exaggerated prominence of one or two. Our profession is (as it were) the very priesthood of Nature; and (to pursue the analogy) he who is deformed or imperfect in any of the more important organs of the mind, is scarcely fit to be a member of it. His literary or scientific acquirements may be great, his moral worth unquestionable. But without a certain symmetry and completeness of mental organization (such as is quite compatible with but a moderate development of each particular faculty) he will never be a useful practitioner of Medicine. Goldsmith's genius and information did not prevent him from being surpassed as a physician by apothecaries probably far inferior to him even in professional knowledge. And only figure to yourselves what would be the havoc wrought by a Dominic Sampson, if such a learned and excellent man addressed himself to the practice of Surgery!

There is another circumstance connected with lectures which especially fits them to be a means of medical teaching. In our profession, it is quite essential to be a good listener; so much so, that you will hereafter find the whole usefulness of your life depending on the application of a mental process of which listening is, at any rate, the first (and therefore the most necessary) step. Your patients will come to you with statements which, whatever their faults of manner and matter, it is vitally important that you should hear and comprehend. Their stories will occasionally mix up invaluable information with strange absurdities and mistakes, important suggestions with the most whimsical and futile proposals. To all this it is your duty to listen, not only patiently, but kindly and watchfully; letting nothing escape you, and encouraging or questioning the narrator where the account becomes defective. If you cannot do this—if you cannot reduce this chaos to order, unravel this tangled skein till it becomes a clue that leads you, direct through the labyrinth of the organism, to where Life is being poisoned at its centre; if you cannot, in a few minutes, construct a systematic and connected narrative out of the feeble, broken sentences of pain and disease, or the ravings of terror and imbecility;—you may be a greedy devourer of books, and a keen critic of their contents, but you will be worthless to your patient. I need not point out how admirably everything that tends to form a habit of hearing attentively, and analysing carefully, may help to prepare you for such a task. And though I do not commend the qualities of dryness or tediousness in a lecture, and strive (I

fear with but scanty success) to avoid them, I do say that you need not find them an unmixed evil, but rather a salutary discipline—a new instance of an old proverb, *παθήματα μάθηματα*.

But lectures subserve other purposes of even greater importance. So vast is the mass of information published on every conceivable subject, that a student's choice of books requires the aid of some one conversant with the particular science. If not so assisted, his choice would sometimes fall on the wrong work. He would select, for example, what was inaccurate, where error was peculiarly dangerous to himself and the public; or what was voluminous, though it could receive little of his time and attention; or what was superficial, though it might behove him to be profound; or popular and attractive, though, in an unknown science, the reader can rarely purchase these advantages, except by the book's concealing or ignoring some of those difficulties which it is the student's express object to master. Now, in all these points, lectures can materially aid you. They teach you, directly, what the lecturer knows on the subject; and this, whether little or much, is at least equal to an average book. But, indirectly, they do far more. They guide you to select, from the books you have access to, whatever is most true and useful. They enable you to proportion its quantity to your requirements, and to the time at your disposal. They conduct you gradually through the successive parts of their particular subjects, at a rate which gives time for careful and repeated study, and yet falls within the session devoted to them. And, lastly, they impart, by illustration, by demonstration, by repetition, suited to the actual requirements of the class, what no book will ever give, until books are constructed so as to think and feel, to walk and talk.

If this be correct, your duty in reference to lectures is obvious. I need say little about the attention they claim, or the contagious influence, for good or evil, exercised by the behaviour of every member of a class. For I know by experience with what confidence and respect an audience of medical students will listen to any one who can show that he is moderately acquainted with his subject, and thoroughly anxious to teach it. But the view I take of lectures is, that, contrasting them with the instructions given by a tutor, they require, I must not say *greater*, but at any rate more co-ordinate efforts on the part of the student. They require, indeed, that he should be his own tutor. And just in proportion as his previous acquirements and his mental qualities enable him to assume this lofty position, does he reap the full advantages derivable from them.

As one chief element of these co-ordinate duties, I may allude to the taking of notes. Many an educated person who hears an able sermon or speech would probably be startled to find how little they could reproduce of what had so much interested or impressed them. Even setting aside that class to whom (in the language of Bacon) words are not counters, but money—a class well

represented by the old lady who derived profound mental comfort from the recurrence in a sermon of "that sweet word Mesopotamia"—a large proportion of mankind seem to carry away little more than a vague general impression from what they hear on most subjects: an impression which may be both strong and lasting, without at all implying any real acquisition of knowledge, or—if one may recall a much abused word to its true meaning—any *edification*.

Nothing remedies this common defect like the discipline of taking notes. To every new student I say, "Take careful notes of your lectures. Take them, not only because they will give you what ought to be a sound skeleton treatise on the particular subject—and I will only add, that I have in my possession one or two treatises of this kind, by my own old teachers, far superior, in such a point of view, to any books hitherto published—but because they will also give you a habit of concentrated attention, a tenacity and accuracy of memory, and a power of selection; far more valuable than even the information they afford. No student ought to be satisfied with merely listening to lectures until he has taken notes of two or three courses. And wherever you have two courses on the same subject in successive sessions, I earnestly recommend you to take notes of the first, merely retouching and amending them during the second. The time necessary for re-writing such notes is so great, that it will be better for you to keep to your first manuscript. And, for a similar reason, the only short-hand advisable is what might be better termed *short-head*—that is, the disencumbrance of your notes, as you write them, from the various repetitions, illustrations, or expletives so necessary to an effective course of lectures.

I may next allude to the subject of *reading*. If any of the foregoing remarks appear to discourage this indispensable means of study, pray let me explain that it is the abuse, and not the use, of reading that they are levelled at; and that certain conditions once satisfied, a student of medicine can hardly read too much.

But it is because I doubt whether these conditions can generally be satisfied by the majority of students, that I feel it my duty to suggest caution and moderation. Of course, every man ought to take care that the books he reads are worth reading; and (what is equally important, though less obvious) that he does not read, as many seem to do in the present day, merely to amuse himself, to while away the time, or to avoid, rather than to excite or assist, reflection. And it is hardly necessary to state, that if he reads more than he can comprehend, or if he loads his memory with facts while he neglects to reason upon them, he studies books to worse than no purpose.

But to these truisms we may add some considerations, more specific to the student of Medicine, and calculated still further to restrict the mere amount of his reading. The duties of the student, on the one hand, and of the practitioner on the other, in respect to reading, are not only

different, but opposite and complementary, to each other. The student has to acquire, not only information, but the habit of acquiring it. This is best done by devoting his concentrated attention to a few books. Indeed, were books really good enough, or science less rapid in its growth, the phrase "*homo unius libri*" would still be almost a commendation. Singling out one or two class-books, he must, not so much read, as *master* them; assuring himself, by repeated self-examination, that he has thoroughly conquered every preceding section before he passes on to the next; so that, on reaching the end, he can look round on a field of knowledge where he has not left a straw standing. One or two good books thus mastered, and the new student becomes an altered man for life.

The practitioner of Medicine has, it seems to me, a very different course to pursue. He must skim and cull and select from a variety of books; glancing at many, dipping into one or two, studying few or none. But it must be observed that nothing short of previous genuine study, such as I have described, give him either the title or the ability to do this. It is only by the thorough reflection such a process generally involves, by the attention to words, sentences, phraseology, and arrangement, which the student is thus forced to bestow on his class-books, that he can generally learn to train his judgment, so as to seize at once on what is valuable. And yet nothing short of a facility of this kind can enable the practitioner to keep at all acquainted with the produce of a teeming professional press, in which literature merges into science, and science bears directly on human life.

The absolute amount of reading which may be profitably done by each student depends, however, to a great extent on his idiosyncrasy. A slow reader, and a slow thinker, with moderate powers of memory, might often advantageously confine himself to his notes of lectures; amplifying and correcting them, it may be, by any he can borrow from his fellows, and using his books chiefly for reference, to enlarge his perceptions or add to his information. A student of quicker apprehension, or better memory, can of course read much more. But such an one will do well to assure himself that the quality of his reading does not degenerate as its quantity increases. He will hereafter find it a poor consolation to know the perhaps contradictory opinions of half a dozen authors on some unimportant detail, when he is vainly striving to recall the principle which should guide his treatment of a dangerous disease or injury. And even if he can recollect the composition of a drug to six places of decimals, the information will hardly relieve his mind, if he has let slip the reason why he ought or ought not to prescribe it in the case before him. Indeed, the possession of those intellectual qualities which make up what is popularly termed "*cleverness*" ought to be regarded by the student rather as a means of economizing time than as an advantage *in and per se*. The clever student must remember that, though he starts

from a vantage ground, the difference between himself and his competitors can hardly be tested for some time in respect to real progress. The stronger his memory, the quicker his apprehension, the more time he will have to cultivate the higher faculties of which these are the servants. Good servants, it is true, but, like fire, bad masters. If he pride himself on them, and rest in them, they will infallibly do him more harm than good. He must therefore be jealous of their approach to this dominion; and should test his right to the study of an extended list of authors, and to a wide sphere of reading, not only by his knowledge of his notes and class-books, but by his progress in other duties: by his zeal and ability in the dissecting-room, his profit from the wards of the Hospital, and his skill as a Dresser or a Clinical clerk. If these duties are well done, he need not be afraid of reading.

The advanced student may indeed not only read more than the neophyte, but may profitably follow a different plan, which may be called *casual*, as distinguished from *systematic*, reading. The moment of excited curiosity on any subject is a fleeting but valuable opportunity for inquiry: the rise of an instinctive desire, which Nature rewards us by a direct mental gratification for appeasing. And it is as well not to be wiser than Nature; but when any interesting case, any suggestive remark, excites your curiosity, proceed as speedily as may be to gratify it. And in doing this, do not be easily satisfied; bring all your information, all your books, to bear upon the subject of inquiry; converge and concentrate, as it were, all the rays of light you can throw on it into a focus. The topic thus mastered may not be always quite so important as at first sight it seems to be. But your gain is not the less solid and lasting; for you thus help to lay the foundations of permanent and invaluable habits.

Upon the subject of *clinical instruction* I must not enlarge, in spite of its paramount importance, partly because time fails me, partly because the arrangements by which it is at present imparted in this metropolis are still too imperfect to speak of with complacency. Thus much, however, I may safely say, that these very imperfections call for increased diligence on your part. And I believe that whatever improvements in this respect may hereafter be extorted by public opinion, will nowhere be more heartily welcomed than at this Institution, which is already fully on a level with other Hospitals.

Constantly in the course of the preceding remarks I have felt that, whatever their truth, they lacked many recommendations they might have derived from their utterance by some other speaker. But I am about to state, in conclusion, what perhaps I can say better than any of my colleagues. In some respects few of them can, so fitly as myself, commend to your approbation the School which now stands upon another year of its existence. For I have hitherto had no voice in its excellent arrangements. I am still unconnected with the most important part of that

teaching which a Medical School implies. My duties as a lecturer are confined to the subordinate task of collecting and arranging such fragments of the other subjects taught here as constitute what is termed Forensic Medicine, and of supplying the unavoidable absences of our distinguished Lecturer on Physiology. And I cannot expect that other engagements will long permit me to sustain even this casual and subordinate share in the instruction given here; or that, meanwhile, any efforts of my colleagues will succeed in rendering my position as permanent and useful as they wish it to be.

But these very circumstances leave me free to express a comparatively unbiassed opinion; and justify my recording, more plainly than, as a lecturer, I could otherwise do, the deliberate conviction—that no Institution in this metropolis offers to the student a better field of clinical observation, or a more rational and practical adjustment of the various lectures and demonstrations which claim his notice. And as every Institution has its peculiarities, I may mention one or two by which this Medical School is distinguished. It was almost the first to give the student complete courses of lectures on General Pathology, and on Clinical Medicine; and to add to the Demonstrations of Anatomy, a series of Demonstrations of the Use of the Microscope. More recently it has made an equally important addition to its means of instruction, in the appointment of a Tutor, whose office it is to assist the junior students with that personal aid and superintendence they so often require. To preliminary education it accords unusual encouragement, by awarding prizes to the new students for proficiency in Classics, Mathematics, and Natural History. And lastly, in all the competitions amongst the students of the various years, it endeavours systematically to discourage the undue or exclusive study of one or two subjects, by limiting its rewards to those who show that they have successfully studied most of the subjects allotted to these divisions of the student's career. And this part of the system of St. Thomas's Hospital attains its full development in the rewards proffered to the student at the end of his attendance, especially in the Hospital Registrarships recently established—appointments which combine with a stipend sufficient materially to enlarge the "*res angusta domi*," duties, of all others, most valuable to the successful student; inasmuch as, by connecting him with the Hospital, they give him the best reward of his previous industry, the largest opportunities of increasing his knowledge and usefulness.

We have thus glanced at some of the chief intellectual peculiarities and risks of your studies. But I have neither time nor ability to treat of other dangers, both moral and physical, which beset the medical student. You know, however, that as compared with students of the older English universities, you wear a lighter chain of discipline, and enjoy more personal independence, even while your residence in a metropolis adds various temptations from which they are com-

paratively free. Perhaps this evil is not quite unmixed with good. At any rate it is in some degree counteracted by the peculiarly humanizing bent of your studies; which while they force you at every step of your path to observe the sufferings of your fellow-men, incidentally teach you not only to assuage, but to feel for, these sufferings; to consider their frequent causes, their often ennobling effects. And, indeed, this evil is still further diminished by the relation which connects us with you as teachers and pupils. For not only are our pretensions somewhat less, and yours somewhat greater, than those of university Professors and Under-graduates respectively—we undertaking these duties only as a partial occupation of our time; you learning the specific business of your life, so as to attain, in a few sessions, a professional equality with ourselves—but our sympathies are, I would hope, still further cemented by those practical duties which many of your teachers share with you. I appeal to you, therefore, not only as pupils, but much more as friends and fellow-workers—as our younger brothers in the profession. Carry out in the lecture-room, and in your privacy, the process which I trust all of you will inaugurate in the dissecting-room and the Hospital. Help us to teach you, by systematically teaching yourselves. Give us the satisfaction of hereafter knowing that, in assisting your education, we have handed down—let us hope not without adding our mite of interest thereto—that vast legacy of knowledge bequeathed to us by the great and good men who heretofore practised our noble profession. Remember that in your after life you will, in some sense, represent us as well as yourselves; and that, whatever may be our successes as practitioners of Medicine, we cannot hope that they will confer on the public any benefits at all comparable to those which your skill may hereafter render us the instruments of diffusing, to vast numbers, and to latest posterity.

Practical Lectures

ON THE

MANAGEMENT OF THE DIGESTION IN DISEASE,

*Delivered during the Summer Session of 1857, at
St. Mary's Hospital,*

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LECTURE VII.

ON THE DIETETICS OF DERANGED DIGESTION.

I do not know a greater comfort, at a bedside, than the being able to refer a doubtful point to some broad law based on reason and experience. I question whether our knowledge is yet sufficient to enable us to frame rules of this sort applicable to special forms of disease—certainly not on a scale to constitute a *methodus medendi* of practical value. But on such a subject as the administra-

tion of food—a subject where the rational argument hangs on the most extensive range of physiological facts that we possess, and where the experience is gained, not from isolated instances, but from every patient we attend—I think we really are in a position to have some trustworthy rules of action.

As a contribution towards clearing away the mistiness of our clinical dietetics, I purpose to set before you in one lecture certain theses which are my guides in this matter, and perhaps therefore may help you also.

The leading idea of the first placed and most important rules is simply that of sparing a weak member—working those who can work and resting those who cannot.

I.

When the stomach is off work, spare it, and leave the digestion as much as possible to the intestines.

This applies to cases of weight and pain after eating, heart-burn, acidity, hæmatemesis, vomiting of unaltered food, and fermentation. Should the conjunction of symptoms enable us more definitely to diagnose gastric ulcer, mucous flux, cancer, or any other more definite anatomical change, the application is all the more forcible.

Spare the stomach both its *mechanical* and its *chemical* toil.

The first is the hardest, and therefore most necessary to be avoided. A meal—that is, the laying in of victuals to avoid future rather than present hunger—is a labour, even to the healthy; so do not impose it on a sick stomach. In very bad cases, do not divide the daily allowance into meals* at all, but assign such quantity as appears enough for the twenty-four hours, and let the taking of it be spread over the whole time, as equally and with as short intervals as possible. In milder cases it will be sufficient to “*spoil*” the meals—that is, to take food between the usual times, so as to leave neither the necessity nor the inclination for eating at once as much as other people. One would be sorry to recommend to the healthy an over-care for their diet, but to invalids subject to gastric derangement, you cannot do better than advise an imitation of a famous centenarian witness, examined by the scientific judge, who said he attained his great age by always “eating before he was hungry, and drinking before he was dry.”

Take care, however, that your patients do not spoil their dinner and eat it too: that last error would be worse than the first. Make it a rule that the slightest sense of repletion is to be a warning to desist.

Another valuable expedient for sparing the organ, in cases only slightly indisposed, is Dilution of the meal. Copious watery drinks carry the food on quicker through the pylorus, and give great relief to over-sensitive, irritable stomachs. But at the same time it must be remembered that thus the time for the action of the gastric juice is

shortened, and its chemical strength lessened, so that more is given for the intestines to do. It is better, therefore, to let this dilution be practised as long after the meal as the case admits of. It should be avoided also as a general rule where an obstructed circulation impedes absorption of the water by the portal veins. Patients with dilated heart, for example, and some cases of anæmia and of diseased liver, suffer much inconvenience from a sloppy diet. Obese persons also should avoid dilution; it washes away the albumen which they do want, and allows of the absorption of fat, which they are better without.

The chemical toil of the stomach may be spared by giving it less to digest, and more to digest with. Take care that the weak but well-meaning organ is not reduced to despair by solid lumps of albuminous food. The best form of nitrogenous aliment in these cases is whey, or milk prevented from coagulating by a copious admixture of lime water. This fluid meat will pass through the stomach unaltered, the gastric juice will trickle through the pylorus at its leisure after it, and with the intestinal juice will digest the casein in the intestines. Next in easy solubility comes soup made fresh, weak, and at a low temperature—fresh, that it may not decompose; weak, that it may be easily absorbed; at a low temperature—that it may not be filled with innutritious gelatine, or with hard-boiled albumen. Meat is suitable in proportion as it is soft, easily disintegrated, free from fat which might oppose the soaking in of the gastric juice, and quickly cooked. The well-known list of Dr. Beaumont sets in the order of these qualities a great number of articles of diet. But I think it more useful for you to have the principles of selection, than a mere experimental enumeration of the articles themselves.

To mix starchy food with the albuminous in cases of weak stomach digestion is an irrational practice. It soaks up the little that there is of the valuable gastric juice, and then makes no use of it; for starch is quite unaltered by the peptic solvent. This is very bad economy indeed. Moreover if taken in quantity sufficient to assist much as a nutriment, it is too bulky, and being converted into sugar by the saliva, turns acid in a mass and puts astop to further digestion. This is particularly the case if it is in solid coherent lumps, such as potatoes, soft bread, pastry, and the like.

Starchy food, *unmixed* with albuminous, is a different thing altogether. There certainly are some cases of gastric disorder, which are much benefited by a temporary adoption of such a diet. It is the best during acute catarrhal bilious attacks, at the commencement of treatment of even chronic gastric cases, and whenever the dusky complexion, hypochondriasis, and general distress, show that arrested moulting has caused a retention in the body of *effete* tissues. It does good, in fact, as a temporary starvation. Hence you will see me occasionally begin the treatment of such cases by “our simple diet,” and still oftener in private practice, where starvation for a time is more generally wanted than in hospitals, I give a pa-

* A MEAL (as in Saxon “male,” in German “mahl” and “mal”) implies *apportionment* of food, time, or anything else. So Bacon “the yearly rent is still paid into the hanaper in parcel meal”—that is “in lots.”

tient nothing for two or three days but arrowroot-panada, tapioca, gruel, &c. This enables the congested portal system to disembarass itself so as to leave a clear space for the taking up of fresh supplies.

As you return from a pure starchy, or pure animal diet, to that mixture of the two which is normal and necessary to the healthy condition; or if you consider that the case is not bad enough to oblige you to adopt either one or the other absolutely, you may be of use by so arranging that the two sorts of aliment shall not be together at once in the stomach. For example, let the morning and evening diet be vegetable, and then let several hours pass before and after a mid-day meal of purely animal food.

Spare thus the stomach by giving it *less to digest*. You need not be afraid of starving your patient by diminishing the quantity eaten. A little digested goes much farther than double the amount only swallowed. For example, you saw last time we went round the hospital, a girl, in the corner of Victoria ward, who had gained four pounds in weight during six days, on the sole allowance of three pints of milk and less than twelve ounces of bread per diem. A man (No. 8 in Albert ward) has also visibly gained flesh in the same time, although he has only a pint of beef-tea besides what I mentioned as the girl's allowance. He is too weak to stand in the scales, but the increase is apparent to the eye. Both these patients had, till their admission to St. Mary's, been trying to strengthen themselves by meat, and whatever they could get, but having gastric ulcers did not digest it, and were rapidly emaciating.

Spare it also by giving it *more to digest with*. I mean by supplying an artificial gastric juice. This is a mode of treatment so interesting just now, from our being enabled to do it with novel facility, that I shall make it the subject of a separate short lecture, so as to be able to give fuller details of its practical working.

II.

When the functions of the small intestines are off work, spare them.

Of acute diseases, this applies particularly to typhoid fever, (during both its height and its sequelæ,) to enteritis, diarrhœa, and cholera; of chronic diseases, to ulceration, tubercular deposits, either in the peritoneum, Peyer's glands, or mesentery, and, secondarily, to disease of the liver.

What, now, are the functions of the small intestines in relation to different forms of aliment? and what colleagues have they that can be trusted to take their duties during a temporary vacation? They absorb all matters soluble in water and capable of endosmosis, and have in that work all the mucous membrane of the alimentary canal to assist them. They convert starch into sugar before absorbing it, in conjunction with the saliva and pancreatic juice. They dissolve albumen, and convert it into peptone, in conjunction with the stomach. But in the digestion of fat, they have none to help them.

All ordinary *fats and oils*, then, must be rigorously excluded from the dietary of these patients. Even cod-liver oil, so peculiarly wanted in phthisical cases, and so easily digestible, will often become rancid in ulcerated bowels, and aggravate the diarrhœa. If it does aggravate the diarrhœa, depend upon it more harm than good is done by the remedy. Leave it off forthwith; the case is an unsuitable one for it at that stage of the disease. And if cod-liver oil disagrees, *a fortiori* do other less digestible fats. I have known the mere skimming the fat from broth make all the difference whether it were digested or not, and leaving off the simple article of butter make a previously useless treatment immediately successful.

Starchy food will agree only on the conditions that it is taken in small quantities, and that the saliva is in a state to do alone what generally it has the small intestines to help it with. If the secretions of the mouth are deficient, it will not agree. Hence, in typhoid fever, for instance, where the fauces and tongue are dry, you will see me never order arrowroot, bread, panada, gruel, potatoes, or any amylaceous article. Where they are eaten, they will be found unaltered in the fæces, and not rarely cause considerable aggravation of the symptoms. I have particularly observed this in convalescent patients *after fever*. You are surprised often by an unexpected relapse: examine the stools, and there you see lumps of potato, bits of pastry, or a mass of starch granules. The foolish friends have been disobeying orders and giving these articles, which cannot act as a nutriment and do act as a poison.

On the other hand, a phthisical patient, with a clean, wet mouth, will generally digest them well, in spite of his ulcerated bowels, provided they are well chewed and are not lumpy.

Albuminous food will agree, provided that the stomach is doing its duty. But you must not forget that it has lost a potent colleague, and be careful to prepare the food so as to require only a short time to digest it. Milk must not be passed on to the small intestines by being guarded with alkalies, but had better be soured and made into whey. Some of the curd, broken up quite small, may be taken with it. Frequent dilution with watery drinks, and the use of artificial pepsine, are of eminent use in these cases, so as to insure the absorption of the food as quickly, and as high up in the intestinal canal, as possible.

III.

Where you wish to hasten absorption, dilute with water.

This is so obvious a consequence of those laws of Osmosis which almost every course of lectures, anatomical, botanical, physiological, medical, has occasion to recite, that I will spare you.

The rule finds its chief application in fevers, but it must not be passed over in ulceration of the alimentary canal and other local disorders, where protraction of the process is painful, or in emaciation and convalescence, where we would not wish

to waste time, but to give a person all the nutriment possible in the day.

IV.

When you wish to delay absorption, dilute with solids.

For solids to be diluents, they must of course be incapable of absorption; and the substance I principally refer to is cellulose in its various forms of chaff, bran, husks, skins, seeds of fruit, green vegetables. Cellulose, being incapable of chemical change there, passes unaltered through the alimentary canal, carrying with it first the chyme prepared for absorption, and then adding its bulk to the fæces excreted. Thus the absorption is spread over a longer time and a larger surface of mucous membrane, and the whole brought equally into work. A collateral advantage is that the peristaltic wave acts with more regularity when it has a solid to propel, than when the contents of the tube are fluid only. The rule is useful, not so much at the sick-bed as for the prevention of sickness. Many persons are made ill by their diet being more immediately digestible than they have been used to. Scotch labourers on exchanging oatmeal for wheat-flour, Finn recruits on getting bread at head-quarters without birch-bark in it, country persons on coming to London or Paris, often suffer from this cause. The mode of prevention is obvious and cheap; cabbages, brown bread, and charcoal offering types of treatment readily altered according to taste.

In the administration of medicines, something may be learned from the same expedient. Quinine occasionally will not agree where powdered bark or decoction of bark will yet succeed very well; and the same may be said of the soluble and insoluble salts of iron, of morphia and opium, and similar drugs identical in all but insolubility. I believe the secret is that a slower and more graduated absorption is gained.

I have elsewhere* stated reasons for suspecting that gum and gelatine may be classed amongst unabsorbable diluents of the food, and are not really nutritious; but the argument is hardly suited to a practical lecture.

V.

When the diet has been diminished, return gradually to the normal in quantity and quality.

I suppose mere instinct teaches this, for all acknowledge the justice of it as a sort of truism, and agree that a convalescent diet should be "light" at first, and afterwards more "substantial." Perhaps, as respects quantity, error is rare; but the spirit of the rule in regard to quality is often lost by misinterpreting the words "light" and "substantial." Scientific men must not think vaguely, and you must have clearer ideas than the old nurses who so often hurt your patients by misapplying these expressions. I shall not, therefore, think I am wasting time by explaining what the rule really means.

I formerly† divided foods into such as are

capable of direct absorption without change, and such as require a previous change by the digestive juices; and the same division has also been adopted by M. Bernard. By subdividing the latter class into such as require only direct chemical change, and such as require disaggregation as well, we get three groups of aliments; the first the "lightest" or most digestible; the last the most "substantial;" the second intermediate. M. Bernard observes the first necessitate but one physiological act; the second, two; and the last, three;* and, consequently, in that order demand proportionate amount of labour from the system.

Under the first head come water, essential oils, tea, coffee, alcohol, ethers, salts, sugar, whey, gravy (containing osmazome); asses' milk, with its small quantity of butter and casein, and its large allowance of sugar, forms a transition, through cows' milk, to the second class, in which come soups, lightly-cooked eggs, well-boiled liquid-starch; for the third class, tripe, oysters, sweetbread, and boiled chicken come nearest to the second, while the power of digesting hard meats (such as beef) or solid lumps of starch (such as potatoes), shows that the full normal powers of digestion have been regained.

This is something definite, and with this idea you will find no difficulty in making a graduated scale up which a convalescent patient may safely mount.

VI.

The use of alcohol is indicated in diseases—

1st. *Where the pathological condition limits the due supply of nutriment, and the repair cannot therefore equal the normal destruction.*

2ndly. *Where the destruction is so excessive that the normal repair cannot equal it.*

Under the first head come all acute typhous, and, in fact, all acute diseases, not excepting inflammatory ones, where the "nervous" energy (as it is vaguely called, meaning vitality in general) is defective.

In low fever, if you examine the urine, you find the specific gravity high, and the urea is normal or even in excessive quantity, showing that the nitrogenous tissues are passing away as quickly, or more so, than in health. The phosphates are also going off in the same way and by stool, and the blood exuding in the alimentary canal and bronchi. Yet their place is not taken by fresh tissue—the vital powers are deficient—death is struggling hard to overcome life. What you have to do is to arrest death.

The use of wine in pneumonia, in surgical injuries, and, in short, the not being frightened out of stimulation by the termination in "itis," has saved many a life of late years in this metropolis; and though perhaps it may not be so much required in the more bracing regions to our north-east, still even there the practice is gaining ground against prepossession, showing that it is really beneficial.

* Digestion and its Derangements, book 1, p. 360.

† Ibid., book 1, p. 126.

* Mémoire sur la Question suivante mise au Concours, par le Société de Médecine de Lyon, pour l'année 1856, &c., &c., obtenue par M. le Dr. Bernard, fils. Lyon, 1857.

Under the same head, too, comes a deficiency, congenital in some individuals, who constitute the half-pitied, half-despised class known as "poor creatures"—persons who, without any classifiable disease, are always over-exerting themselves, and unable to live like their neighbours without failure. From deficient powers, they are unable to assimilate enough to take the place of the interstitial destruction, and therefore if the outgoings are not limited, or the incomings increased by special management, their tissues must suffer, and innumerable ailments arise as consequences of over-destruction. In the management of these cases, dietetics are of the utmost importance, and of dietetics the most important part to them is the judicious employment of alcoholic stimulants. If too much is used, a low state of vitality is induced, which leads to degeneration of the various viscera; the heart may become weak and dilated, or the kidneys shrunk and hard, or the liver contracted and impervious, and the stomach and other glands lose their secreting structure, or the blood become pale and fatty, the skin sallow—in short, some of the evils of chronic alcoholism be set up. If too little, then exhaustion of the nervous and muscular system gives occasion to anæmia, inability to digest food, emaciation and debility; while those with hereditary tendencies thereto run the risk of tuberculosis or insanity.

The best general rules I can give for the attainment of the golden mean of alcoholic stimulation are the two following:—

First, *let the form be dilute.*

Second, *let the effect of one dose go off before another is taken.*

The dilution of an accessory drink makes it a better measure—a man easier finds out when he has had enough. Besides, the direct effect of the alcohol on the mucous membrane is avoided.

A strict observance of the second rule enables us to shun all the dangers with which teetotalers threaten the moderate consumer, and the neglect of it constitutes the peculiar risk of spirit-drinking. It is a familiar fact, that men take their pint of wine or beer daily throughout their working life, feeling daily the same beneficial exhilaration; but if once they begin to experience depression afterwards, and relieve that depression by fresh doses of alcohol—"a hair of a dog that bit them"—temperate use is at an end, abuse has begun—in order to produce the original effect, the quantity requires to be continuously increased, and then commences the slow interstitial death, which is the goal of the habitual spirit-drinker.

Lectisomian Lectures

ON

MIDWIFERY,

Delivered before the Medical Society of London,

May, 1857.

By ROBERT BARNES, M.D.

LECTURE III.

(Concluded from November No., p. 363.)

THE TREATMENT OF PLACENTA PRÆVIA: THE NEW PHYSIOLOGICAL METHOD.

THE cases and arguments I have brought under your attention demonstratively exclude the operation of artificial total detachment of the placenta as a *principle* of treatment of placenta prævia. These cases in reality furnish strong presumptive evidence to corroborate the positive evidence I have adduced, that partial detachment of the placenta—i. e., detachment of the portion implanted within the cervical zone of the uterus, may be enough—certain favourable conditions concurring—to control the hæmorrhage.

Now this partial detachment is an operation that admits of being accomplished by the introduction of one or two fingers, and is therefore feasible under the precise circumstances which preclude turning or total detachment.

We have, then, here a new remedy, one applicable at the very juncture where ordinary means are impossible or dangerous. As contrasted with the operation of totally detaching the placenta, it has the further advantage of not endangering the life of the child.

As contrasted with forced delivery it has also the advantage of being less hazardous to the child.

I shall presently describe an operation based upon an imperfect appreciation of my views, proposed by Dr. Cohen, of Hamburg. It consists in detaching the smaller segment of the placenta, which adheres to one side of the cervix. This operation is certainly calculated to be of most eminent service in certain cases; and I have no doubt it has often been performed undesignedly, or without the guidance of an intelligent principle, when endeavouring to rupture the membranes and turn. That has been done tremblingly, as an accident, and without intelligence, as an unavoidable step towards the attainment of a different end, which was of itself the means of safety—the real end that a true physiology would have dictated.

The operation which I propose is, to carry the detachment further, so as to separate all that part of the placenta which adheres within the cervical zone or region of dangerous placental seat.

It remains to endeavour to generalize the varieties of cases of placenta prævia; and to endeavour to define the methods of treatment more particularly applicable to each variety.

1. We have those terrible cases to which we have just adverted, where the os uteri is rigid and

undilated, the flooding profuse, the powers of life ebbing fast; where to wait for spontaneous arrest of flooding, or the natural dilatation of the os, is to wait for death. These are pre-eminently the cases for resort to the operation referred to. It must, however, be first stated, that this class admits of being further subdivided. There are cases in which contraction of the uterus is going on; there are cases—more dangerous still—in which contraction is absent. Labour with relaxation is dangerous under almost every condition: it is eminently so when complicated with placenta prævia.

Where contraction is present, we possess one necessary element of safety; we may be satisfied with the artificial separation of the placenta from its attachment to the cervical zone. Where contraction is absent, we must at the same time use every available means of rousing the contractile energy of the womb. Sometimes the stimulus imparted to the reflex system by the necessary manipulation is itself enough to excite contraction. But not always. We must then give stimulants internally; apply warmth to the surface if the skin is cold and there is great depression; rub the abdominal muscles and the body of the uterus firmly. This is a case where the ergot of rye is especially indicated. If it fail, then we have galvanism, which rarely or never fails—an agent perfectly under control, which we can apply and intermit at pleasure, and whose force we can graduate as we like. Dr. Radford has, I think, fairly established the value of this agent in cases of this kind; and I may refer to a paper which I had the honour of reading before this Society, in which the subject is further elaborated.*

Dr. Cohen,† of Hamburg, has described an operation which may be distinguished as the *Partial Cervical Detachment of the Placenta*. It is not founded upon a full appreciation of the true physiology of placenta prævia, but I have no doubt that in many cases the operation will prove sufficient to control the hæmorrhage and convert the labour into a natural labour. Dr. Cohen describes it as follows:

THE OPERATION OF PARTIAL CERVICAL DETACHMENT OF THE PLACENTA.

The object of this operation is, to convert a central into a lateral placenta, in those cases where the symptoms are too urgent to warrant us in trusting to the spontaneous efforts of Nature to effect this end. By it we seek to change a labour, *quodâ* placental attachment, from preternatural into natural.

Time.—Even in this comparatively simple operation it is desirable to wait until the os uteri is a little expanded. It may be justifiable to trust some time to the plug; but if the symptoms are

too urgent for delay, one or two fingers may be at once passed through the os. Seek to determine which side of the uterus bears the great bulk of the placenta; feel for the edge of the placenta on the opposite side; rupture the membranes during a pain; tear the membranes freely from the border of the placenta, and sweep the finger round half the circumference of the os uteri internum, so as to detach the placenta completely from that side of the uterus to which the lesser portion adhered. This done, there is nothing to prevent the os uteri from expanding, and carrying the liberated portion of placenta over to the side where the bulk of the organ adheres. In many cases this will be enough to arrest the hæmorrhage. Nature herself will do the rest.

This is the extent of Cohen's recommendation. He affirms distinctly that he has in numerous cases practised this method with success; that he has never lost a mother, rarely a child. It is to be regretted that he has contented himself with this general expression of the result of his experience, and that he has not recorded the cases in which he has put this practice to the test. For want of this, his essay is essentially dogmatic. It certainly is quite in accordance with my own repeated observations of the natural course of labour with placenta prævia. It may be contended that the good done is really effected by the rupture of the membranes. I have no doubt whatever that the evacuation of a portion of the liquor amnii, by permitting the womb to diminish its volume, greatly favours contraction of and expedites labour. But it certainly does not, as I have before proved, account for the good result itself. One advantage of the loosing the placenta from its adhesions to the os and from the membranes, lies clearly in releasing the os and cervix from a mechanical impediment to dilatation, and further in obviating the rending of the substance of the placenta during dilatation. Some obstetric practitioners to whom I have mentioned this subject have expressed a doubt whether the placenta is liable to be torn in this way. I have, however, seen such cases, and many are on record.

If the hæmorrhage should continue, or be renewed with urgency, I propose as the next step,

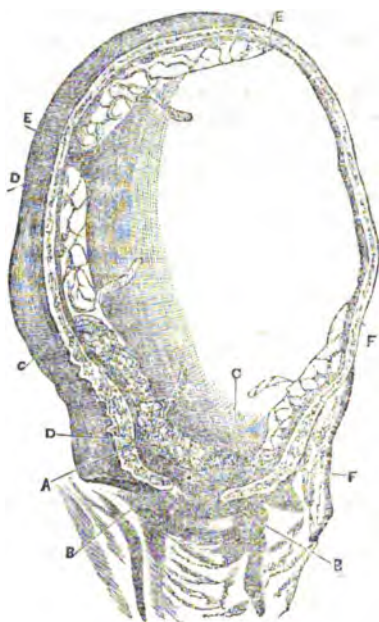
THE TOTAL CERVICAL DETACHMENT OF THE PLACENTA.

The detachment must be carried further, by sweeping the finger round between the placenta and uterus on that side to which the main bulk of the organ adheres. In this manner the whole of that part which had been seated within the cervical zone will have been detached. We shall have imitated the operation represented in the diagram reproduced, as being occasionally—I believe often—effected by the spontaneous efforts of Nature. Now this detachment will not of itself stop the hæmorrhage. We may, I think, tranquillize our minds as to the effect on the mother of that small portion that will escape from the detached placental surface. But the uterine vessels may

* On the Management of Labour characterized by defective Uterine Action and the comparative Value of the Ergot of Rye and Galvanism in Obstetric Practice. THE LANCET and L'Union Médicale, 1868.

† Meine Methode bei Placenta Prævia während der Geburtzeit. Von Dr. Cohen, in Hamburg.—Monatsschrift für Geburtskunde, April, 1865.

pour forth blood until the hæmostatic resources of Nature or Art come into play. The resources of Nature are those I have before described: continued contraction of the muscular structure of the womb, the contractile action of the coats of the uterine arteries, and the formation of coagula in their mouths. In the majority of cases these resources are sufficient; the hæmostatic process may, however, be further assisted by plugging again. A method of plugging is recommended by high authority, which appears deserving of attention. Moreau advises the application of a lemon, the end of which has been cut off, to the



E. E. Fundal placenta.
D. D. Lateral placenta.
F. F. } Latero-cervical placenta.
C. B. }
A. B. } Seat of cervico-urificial or central placenta.
B. F. }
A. } Line of boundary between normal and previal
F. } placental attachment, and consequently of
spontaneous placental detachment during
expansion of cervix.

os uteri, and to retain this *in situ* by firm pressure through rags or sponge. The acid juice favours coagulation as well as the pressure, and retention of the blood. The soaking of the sponges or rags used for plugging in vinegar is a common practice; but it seems to me reasonable that more powerful styptics should be used. I suggested some time ago, the injection of the sesquichloride of iron. Dr. Schreier,* of Hamburg, has related some instances in which this agent was employed with success. M. Dupierris, of Havana,† advises the use of tincture of iodine. He says that he has injected a mixture of one-third tincture of iodine with two-thirds water, in one hundred cases of uterine hæmorrhage of various kinds with uniform success. He relates three cases of

hæmorrhage attending labour. The sesquichloride of iron, however, appears to me the preferable agent.

By the proceedings I have described, we may reasonably hope that in the vast majority of cases the hæmorrhage will cease. If it should not, time will have been gained; the os uteri may have become soft and dilated; and, in the event of its being felt necessary to resort to forced delivery, this operation may be performed with comparative ease and safety.

2. There is another class of cases, happily more frequent than the preceding, where there is less urgency, more scope for temporising. We have seen that the expansion of the os may be effected without necessary loss of blood to such an extent as to constitute flooding. In the conduct of such cases we have in the physiology which I have enunciated a guiding principle that carries a rational faith in the resources of Nature. It is in these cases that the natural tendency to restrain the floodings caused by the successive detachments of zonal portions of placenta is most strikingly marked. A knowledge of this principle will give an intelligent confidence in all those measures, such as the plug, ergot, rupturing the membranes, which has been recommended on various physiological or empirical grounds. Even in these cases the operation of Cohen, of freeing the smaller segment of the placenta, so as to allow it to be carried over to the side of the uterus which holds the main body, will be of essential service.

3. There is a third class of cases in which the principle is all-important. I mean those cases where, after even alarming losses, the hæmorrhage has ceased spontaneously. Under the prevailing dogmas the arrest of hæmorrhage inspires no hope in the breast of the accoucheur. He is taught to believe that it will "*unavoidably*" return; he hastens to deliver; and the poor woman who had reached the haven of safety is destroyed by the operation, a victim of the "*nimia diligentia medicum*."

I have but a few words to say in conclusion. I wish to guard myself against the imputation of having advocated a particular method of treatment as being applicable to all cases of placenta prævia. That is far from my intention. I claim to have developed the true theory, the true physiology of placental presentations, and thus to have supplied a scientific clue in the treatment of flooding from unnatural position of the placenta. This guiding knowledge excludes no method of treatment, no resource that has been found by experience to be useful in given cases. It gives the clue to the right and intelligent application of each in proper time and place. It gives, in addition, the faith, so often necessary in medicine, so often absent when most needed, in the restorative power of Nature, teaching us how to assist that power, and warning us not to rashly supersede it. More than this, the new principle leads to a new method of treatment, a new resource in precisely the most desperate cases, where the ordinary methods of treatment are impossible or

* Monatschr. f. Geburtsh., June, 1865.

† North American Med.-Chir. Review, January, 1867.

dangerous. This method may, as I have shown in many cases, supersede forced delivery altogether, and in many more will be the means of gaining the necessary time to admit of turning being performed with safety. In almost every case it may supersede the practice of wholly detaching the placenta, since the end in view being the arrest of the flooding, it is better to detach only just so much of the placenta as will effect this end than by detaching all to incur the imminent risk of destroying the child.

Note.—It was originally my intention to introduce in these Lectures a critical examination of the claims set up to priority in the enunciation of views on the Physiology and Treatment of Placenta Prævia, bearing more or less similarity to those I have described, by or for Dr. Cohen, Dr. Crédé, Dr. Zeitfuchs, and Dr. Von Ritgen. After very full, and I trust candid, consideration of the writings of these gentlemen, I am satisfied that I shall best avoid all imputation of injustice by calling the attention of the readers of THE LANCET to the papers in the "Monatsschrift für Geburtskunde," which have appeared during the years 1855, 1856, and 1857, in which the cases of these authors are stated by themselves. On my own part, it is only necessary to state, that as far as originality is concerned, Dr. Cohen alone of these disputants has exhibited any correct insight into the true Physiology of Placenta Prævia, and first published his views in 1855; and that the Physiological and Therapeutical Principles elaborated in these Lectures were distinctly enunciated by me, in this journal, in 1847; that the essay of Zeitfuchs does not even allude to these principles; and that the papers of Drs. Crédé and Von Ritgen, which yet contain not a glimmer of those principles, were not published till 1855 and 1857.

With this brief reference to facts and chronology, I dismiss with confidence all controversy with my respected German *confrères*. In their mutual reclamations they have not done me the honour to cite a paper bearing a date some years anterior to that of their discussion. I therefore accept this testimony of suppression or of negligence as a tacit acknowledgment that the right of priority belongs to me.—R. B.

Note 2.—The form and circumscribed number of these Lectures have rendered it impossible to include the full body of clinical and critical demonstration, which the development of a new doctrine demands. I therefore propose to publish Appendices of Cases and Brief Memoirs in further illustration of the leading proposition, and of certain subsidiary questions.—R. B.

September, 1857.

Original Papers.

OUTLINE OF A CASE OF SUDDEN DEATH, OCCURRING IN A CHILD EIGHT YEARS OLD, DURING THE ACT OF EATING, AND MOST PROBABLY DEPENDENT ON PERSISTENT HYPERTROPHY OF THE THYMUS GLAND.

By W. CURRAN, Esq., M.R.O.S. & L.S.A.

HAVING experienced some difficulty in my attempts to account for the sudden supervention of death in this case, and finding the apparent cause—as revealed by subsequent examination—not confirmatory of my suspicions, correspondent with the previous history of the case, or otherwise such as I have either seen myself or heard described by others, I thought it might prove interesting in a pathological point of view, and as such I wish to submit the following notice of it for the attention of such as may favour it with their perusal.

The particulars, so far as deducible from the hearsay testimony of friends and the no less contradictory statements of the child's parents, are by no means pathognomonic of the above condition, and therefore, though supplying no aid or inference as regards diagnosis, are nevertheless, in the absence of more positive symptoms, deserving of consideration, on which score only I attach any value to them.

A. S—, aged eight, described as a weakly, pallid child, of failing cachectic habit and strumous tendency, but withal of buoyant temperament, playful, and fond of exercise, is represented as having been always ailing more or less, but especially so for the last two or three years, during which time he has complained of almost constant pain at the epigastrium and in the left side, occasional epistaxis, nausea, griping, and bilious headache; used to moan loudly in his sleep, start up and speak snappishly; at times was wont to "die away in faints;" but otherwise was active and ingenious, and could play with alacrity. He was never laid up for any time, nor the subject of any serious illness, other than the above gastric derangement, of which he was speedily relieved at a neighbouring hospital; and though manifesting no particular uneasiness during deglutition or afterwards, he was frequently found to refuse his tea, hawk, and complain of tightness and discomfort about the throat whenever he attempted to swallow.

Of late the breathing became perceptibly more noisy and oppressed; he was drowsy and somnolent, and could not swallow solids as easily as before; had also some pain and tenderness at the top of the sternum, and thence downwards towards the base of the heart and left side. About a week or two before death, he became very fretful, frequently pointing to a slight bulging at the lower part of the neck, which at one time was supposed to be an abscess, at another period was thought due to the "kernels of his ears coming down," and was so tender as to make him flinch at the

least touch, and refuse any covering or restraint thereon. This appeared to increase, to aggravate the tendency to spasm, and otherwise impede deglutition up to the day of his death, which occurred very suddenly, while eating slowly of meat and potatoes, apparently in the enjoyment, with a very slight variation, of his usual health. When seen by a medical man, (by whom he was immediately ordered to the hospital, and who, I believe, had satisfied himself, by passing a probang down the œsophagus, that the cause of uneasiness was to be sought elsewhere), he was found almost exhausted from straining and spasm, in the paroxysmal intensity of which he foamed at the mouth, bit his tongue, hawked labouredly, and often as if to get rid of some tracheal obstruction, and looked so livid, pale, and ghastly, as to render some further interference a matter of absolute necessity. With this view he was at once brought to the Royal Free Hospital, but when seen, respiration had ceased and life was extinct. Notwithstanding the clearest evidence of this being so, and that I repeatedly assured the parents of the absolute inutility of further interference, they seemed indisposed to believe me; and more out of consideration to their feelings than from any expectation of a favourable result, I was induced, after having searched the fauces with my finger, and passed a soft elastic tube into the stomach, to try other measures, including the Marshall Hall plan. Galvanism, friction, and nasal stimuli were continued for some time without effect.

In due course a post-mortem examination was instituted at the instance of the coroner, and the following appearances, of which the above is the most prominent, obtained therefrom:—Body thin, spare, and diminutive; some discoloration and lividity, not amounting to actual decomposition, over surface; face pinched and contracted, and cadaveric rigidity entirely gone. There was no undue congestion of the substance or effusion into the ventricles of the brain, the membranes of which were normal in appearance and consistency. Other organs generally healthy, saving perhaps the liver, which appeared to have suffered from some capsular inflammation of early date, and moderate amount, but yet sufficient to cause adhesion between it and some neighbouring structures. The lungs were throughout crepitant, of average weight, floated freely in water, and, except some slight marginal emphysema, exhibited no other trace of disease than a trifling basic vascularity, which was produced most probably by gravitation or the spasmodic effects of expiring life. On, however, removing the sternum, which was closely adherent at its upper third, a large elongated and somewhat pyriform mass was seen to occupy a considerable space of its under surface, firmly attached in front to the anterior mediastinum, behind enclosing the trachea, on which it seemed to lie without causing any obstruction, extending up as far as the opening in the neck, and downwards so as to overlap the base of the heart and its larger outlets; it was irregular in shape, rather

flattened and triangular, of hard cartilaginous consistence, cutting like gristle, and containing in the centre a circumscribed patch of opaque glistening substance, which under the microscope showed some granular matter of tuberculous character, insoluble in acetic acid, and imbedded in a loose fibrous stroma, of variable size, but apparently analogous in point of minute structure to the product of the glandular enlargement generally found accompanying, and usually described under the name of bronchial phthisis. It would weigh from ten to fourteen ounces, or perhaps more, was found to correspond in size and shape with the structure known in hibernating animals as the thymus, and was regarded by several competent to judge as nothing less than a highly exaggerated example of chronic and persistent hypertrophy of that organ. There was also considerable serofulous enlargement of adjacent bronchial glands, and of one especially, which was situated at the bifurcation of the bronchi, on which it seemed to press, and so far resembled, as regards situation, the case of peri-tracheal deposit recently described by Dr. Brinton.

Now, whether this could so rapidly influence the breathing as to suspend life, or whether this suspension was due to nervous irritation transmitted from the recurrent branch of the *vagus* to that trunk, and thence reflected on the lungs, or whether the once distended and flatulent stomach may, by diminishing the capacity of the chest, and tilting forwards the heart, be the more causative agent, I cannot venture to surmise, but must leave entirely to speculation and conjecture.

I cannot, however, forego the opportunity which this paper affords me, of stating that I have for a considerable time back regarded some analogous affection of the thymus—whether that be one of hypertrophy or otherwise—as a more frequent cause of sudden infantile death than is generally supposed, and though unable at present to adduce sufficiently corroborative evidence of this from my own experience, I can safely refer to former inquiry and observation on the subject for a confirmation of what I advance. The following, however, may be given as an illustration how deficient were the materials, and how imperfect our knowledge on this subject as hitherto recorded.

The thymus gland, observes Dr. Baillie, in his “*Morbid Anatomy*,” is subject to few diseases, and is only of temporary existence; few instances, therefore, of morbid structure have been observed in it. It would seem to be very little disposed to common inflammation; therefore, abscesses have occurred in it very rarely, and have been very little noticed by authors. It is more liable to be enlarged in its size, and to become hard in its texture. It once occurred to myself to observe an instance of this sort, but I had no opportunity of examining it very minutely.

Dr. Burns, in his treatise on “*Diseases of Children*,” speaking of *tabes mesenterica*, says that “this state is sometimes accompanied with swelling in the thymus gland and the lymphatic glands of the neck. The swelling of the thymus

gland, by pressing on the trachea and œsophagus, produces difficulty of breathing and swallowing, and sometimes suffocation. By pressing on the subclavian vein it obstructs the passage of the chyle, and may thus excite disease in the mesenteric glands."

This is but a very imperfect glance at the effects arising from diseased enlargement of this gland, and merely amounts to this, that certain natural functions are impaired by it, but no train of symptoms is given from which it is possible to infer with precision, that the functional derangement exists as a consequence thereof. Suffocation, and difficulty of breathing and swallowing, are certain indications of disease; but the facts are wanting which might establish the connexion between these symptoms and swelling of the gland, and which ought to prove that the existence of the former was merely a consequence of the condition of the latter, and not the result of any organic disease in the trachea and œsophagus themselves. Underwood, treating of inward fits, which he supposed due to spasm of the stomach, lungs, or other vital organ, mentions some symptoms, as blueness of the lips, turning up the eyes, faintness, &c., which might be with propriety referred to some thymic affection, and Mr. Hood, who wrote on the subject in the year 1827, finding hydrocephalus not unfrequently associated with enlarged thymus, regarded any considerable increase of it as peculiarly dangerous, not only from the pressure which the trachea, œsophagus, and subclavian vein may sustain, but more especially from the obstruction presented by it to the return of blood from the head to the heart through the larger vessels, and hence conceived that slight surprise, bodily exertion, or sudden excitement to cry, may, according to circumstances, bring on comparatively slight and transient attacks, or the more alarming and fatal casualties of the disease.

For these reasons I consider the case as of peculiar interest; and seeing that this organ, which is especially connected with the embryonic condition, and is supposed, perhaps erroneously, to attain its greatest development during or soon after the termination of foetal life,—at which period its weight, according to Sharpey and others, does not exceed half an ounce, and its normal measurement barely exceeds two inches in length and an inch and a half in width, and that these dimensions are not much exceeded at the age of two years, when its growth and increase entirely cease,—has attained the size and outline above described, I think I am justified in calling attention to it in this communication, the length of which, I regret, scarcely allows me to say more than express my entire concurrence with the coroner in his remarks as to its rarity and interest, and in the somewhat strange and seemingly paradoxical, though otherwise true and appropriate, verdict of "accidental death from *natural* causes," which closed the case and my connexion with it.

Sept. 1867.

ON THE VALUE OF ARSENIC IN CHOLERA.

By C. BLACK, M.D., LOND., F.R.C.S.

FELLOW OF THE IMPERIAL SOCIETY OF PHYSICIANS OF VIENNA
ETC. ETC.

It is now almost three years since I published in a contemporary journal a number of cases of the very worst form of English cholera, in which I had obtained a rapid and effectual cure from the use of the liquor arsenicalis. Since that time I have had ample opportunities of further testing the value of this remedy in cases of English cholera, presenting symptoms so severe that, had the Asiatic form of the disease been prevalent at the time, there would probably have been no hesitation in referring the cases in question to that particular type. In all these cases the arsenical treatment was followed by such rapid subsidence of the symptoms, and by such quick and complete restoration to health, that I have been led to regard arsenic in the light of a *specific* for cholera.

It is not in the milder forms of the disease, which are traceable to disturbing ingesta, that arsenic will be found beneficial; but in those severe and aggravated cases which occur in the narrow alleys, badly drained, ill-ventilated dwellings, amidst the filth, poverty, and squalid wretchedness of certain districts of most towns.

In the absence of necessary sanitary measures, in the conditions favourable to the generation of animal and vegetable poisons, and in the presentation of foci from which the diffusion of such poison may take place, Chesterfield is not surpassed, if equalled by any other inland town of similar size within the United Kingdom. It is a fact confirmatory of this remark, that at no time within the last twelve years has the town been entirely free from typhoid fever; that this form of fever and epidemic typhus ravage the place at intervals of one or two years; that here scarlatina assumes its malignant forms; that epidemic dysentery is not uncommon; and that during the summer and early autumnal months the cases of cholera are numerous, and many of them extremely severe. As an example of the last-mentioned disease, I detail the following case, which occurred in my practice in August last, and which, as one amongst many such, shows alike the character of cholera as it occurs in Chesterfield and its neighbourhood, and the value of arsenic as a remedial agent:—

J. P.—, aged forty-two, by trade a master potter, was seized on August 13th of the present year with violent vomiting and purging, accompanied by frequently-recurring pains in the abdomen, and by general collapse. The dejections were thin, watery, somewhat offensive in odour, and contained a moderate proportion of bile. The vomits consisted of food previously taken, with certain admixture of a thin mucoid fluid.

These symptoms were combated by lead and opium, chalk mixture with catechu, friction, the application of external heat to the extremities, sinapisms, and turpentine stupes to the abdomen,

and by weak cold brandy-and-water to drink. Despite the diligent exhibition and application of these remedies, the symptoms increased in severity from hour to hour. In the morning of the following day, I received an urgent message to attend immediately, as, in the opinion of his friends, the patient would die. On arriving at his home, I found him in the greatest collapse, with countenance pale, livid, and of a leaden hue; eyes glassy and sunken in their orbits; nose nipped; tongue pale and besmeared with a thin layer of mucus; breath cold; great thirst; skin cold and soddened, with a clammy perspiration; voice reduced to a thin, slender, squeaking note; pulse thready, running, and incapable of being numbered. The dejections are involuntary, almost constant, left little or no stain upon the bed-linen, of a faint, sickly odour, and evidently consisted of a serous fluid. The vomits were frequent, and of a thin, pale, sero-mucoid fluid; the cramps, which seemed to affect the whole muscular system, were rapid, powerful, and agonizing in their character. Suppression of urine had existed for fifteen hours.

I gave immediately six drops of the arsenical solution, repeated the dose in ten minutes, and again in twenty minutes more. Directly after swallowing the third dose, the patient, with a slender, tubular voice, ejaculated, "There, that will stay." He was right; it did stay, and from that moment the vomiting ceased. The arsenic was now repeated at intervals of half an hour. By-and-bye, the cramps and purging ceased, the sphincter ani recovered its power, warmth began to diffuse itself over the surface of the body, the pulse became steady, distinct, and numerable; and, at the end of two hours, I left my patient in comparative safety. During the night the arsenic was continued in three-drop doses every third hour. On the following morning I found that there had been no repetition of either vomiting or purging, and that the renal secretion had been restored during the night. Two days afterwards he was able to leave his bed; but his convalescence was marked by anasarca, the result of the action of the choleroïd poison on the vitality of the blood, and of the great diminution of its solid constituents by the copious evacuations which occurred during the urgency of the attack.

Now, this case occurred in a dwelling which stood upon a dead flat of ground, from three to four feet below the level of the contiguous road, which had consequently no fall for drainage, and the cellar of which stood one or two feet deep in water during rainy weather. Its occurrence arose after a heavy fall of rain, and when the imperfect drains in question emitted an almost intolerable smell. It is therefore fair to presume that it had its origin in some noxious emanation from the drains, with which the circumambient air became impregnated, and thus acquired the power of injuriously impressing living bodies.

To destroy such a poison in the blood, I gave to the blood a poison, which acted in accordance with a well-known physiological law, and cured the disease.

I have done so in many such cases, in which the ordinary remedies for cholera had entirely failed, and I have *invariably* found that the arsenic exerted a rapid power of control over the vomiting and purging, and quickly brought about a state of convalescence.

From such data, then, I maintain the *specific* action of arsenic in the very worst form of English cholera, and I thence infer for it a similar power in the malignant type of the disease.

In the East, where at the present moment the tenure of our Indian possessions depends on the maintenance of the health of our soldiers, this dreadful scourge is decimating the heroic band under Havelock, and unless speedily checked, may possibly lose us an empire which has cost us so much blood and treasure to win. Let the surgeons of the Indian army adopt this remedy—let them give it a fair and impartial trial—and I feel confident that with them it will maintain the reputation of a specific for cholera, which I here accord to it.

The instructions for its use are simple and precise. For the Asiatic cholera, ten or fifteen drops in cold water, every ten or fifteen minutes, until vomiting or purging abate, and then smaller doses at more distant intervals, until reaction is established.

Chicesterfield, September, 1857.

ON A CASE OF PECULIAR AND FATAL HÆMORRHAGE FROM THE MUCOUS LINING OF THE VAGINA. WITH REMARKS.

By HENRY OBBÉ, Esq., F.R.C.S., L.S.A., &c.

Miss T—, an only child, aged fourteen years and three months, tall, with fair hair and complexion, of general good health, had not any severe illness since childhood; she had constantly been under the domestic care of her mother, and was never absent from home, and had few or no companions of her own age to associate with. In the beginning of June, 1852, she was seized with a discharge of blood from the vagina, which continued a few days, and was considered by her mother to be the first catamenial flow, (having herself begun to menstruate at the daughter's age.) It was, however, unaccompanied by pain. Ten days subsequently, two or three spots of blood were observed on the girl's dress, and she resumed her usual good health and spirits.

On Saturday, June 27th, the supposed catamenial discharge recurred, and although the loss was profuse, it caused no anxiety to the parents until the morning of Thursday, July 10th, when I was first consulted. I found her in bed, with the face and hands pale, and the general aspect of a person who had lost a considerable quantity of blood. She complained of no pain or uneasiness, except slight headache. There had been a large amount of bleeding during the night, accompanied with dark clots of blood of varied size. The hæmorrhage had for the last few hours been to such an extent as at times to saturate the sheets which were used to receive the blood; but

at my visit, though the attendants stated it to have been much lessened, it was very considerable, requiring a change of applications every half-hour. She was much anæmiated; the tongue and lips were blanched; the pulse above 100, weak and compressible. There was no pain on pressure over the uterus or abdomen, which was flat; the mammæ were small and undeveloped. The bowels had been relieved immediately before my visit. I considered it at first to be an extreme case of menorrhagia, and prescribed sulphuric acid in the infusion of roses to be administered every hour. Iced acidulated drinks were also ordered.

July 11th.—She had been very restless during the last twenty-four hours; the bleeding was not so considerable, but still very alarming, and demanded continual changes of linen. Small clots of blood were continually passed from the vagina; the facial pallor was extreme; the tongue soft and trembling; the pulse more frequent and feeble; the stomach had become irritable, and there had been vomiting. The mother and nurse had, by my directions, examined the external parts of generation, and no peculiar appearance was detected by them. I passed my little finger into the vagina, but could not reach the os tincæ. Half a drachm of the tincture of matico was added to each dose of the acid mixture, and napkins soaked in iced water were applied externally to the pubes and the vulva. In the evening, the bleeding not having subsided, I introduced, with some difficulty, (the hymen being perfect,) my forefinger into the vagina, and distinctly perceived the os uteri to be of a natural size, and closed. The uterus felt normal, but I was unable to make a satisfactory examination. The vagina contained some clotted blood, which I did not remove, so that it might promote further coagulation.

12th.—The bleeding had been very materially diminished; the blood had lost its bright colour, and had become pale and serous. She was much exhausted; the anæmic whiteness of the body was increased; the pulse 130 or 140, feeble and fluttering. There was occasional nausea and vomiting, and she complained of pain in the lumbar region and down the thighs. The intestines were distended with flatus, and there had not been a dejection from the bowels for three days. Effervescing medicine, with hydrocyanic acid, and a castor oil draught, were prescribed, and water, ices, and brandy occasionally taken.

13th.—The exhaustion had increased. She threw herself about with her arms extended. The sickness was greater. The bowels had been relieved; during the effort she fainted, and a large clot of blood passed from the vagina, but the continued stream had quite stopped since yesterday. The stomach was unable to bear nutriment. Cold beef-tea, thickened with arrow-root, was injected into the lower bowel, and a teaspoonful of brandy in water was frequently administered.—Evening: Depression was not so extreme as in the morning. The blood effused was bright in colour, but still not of an arterial

character; more clots had passed, and a great pulsation was felt along the course of the abdominal aorta; it was strong and jerking, and raised the hand placed on the abdomen. No bruit was to be heard. The pulsation of the arteries of the head and extremities was feeble; at the wrist 160. I proposed, as the bleeding had recurred, that the vagina should be plugged by a sponge wetted with the tincture of matico; but, before doing so, I had the advice of Dr. Murphy. On examination, he found the os uteri slightly open, but not sufficiently to induce him to believe that the bleeding came from the uterine cavity. The vagina was now plugged with pieces of sponge moistened with matico tincture, and an ether mixture was prescribed.

14th, Eight A.M.—The patient had objected to take the ether, disliking the smell. Early in the morning the bleeding had returned, and the prostration had been extreme. Large quantities of brandy and other stimulants had been used during the night to keep her from sinking. I removed the vaginal sponges, which were covered with clotted blood, and had a slightly putrid fætor, and replugged the passage to such an extent that the patient complained of a desire to evacuate the bowels.—Eleven A.M.: Dr. Murphy again visited the patient, and we decided upon applying pressure over the abdominal aorta, and the last resort of transfusion was agreed on. On the operation being explained to the parents, they expressed a desire that Dr. Ashburner should be called in consultation. At twelve o'clock he arrived. The previous as well as the present state of the patient was described to him, and he named some drugs that might be beneficial in such a case. We now entered the patient's room, and Dr. Ashburner immediately sat on the bed and commenced mesmerizing her by pressing the last phalanx of his thumbs tightly against hers, and looking steadfastly into her face. He continued in this attitude a few minutes, and then made perpendicular passes with his hand before her face. The exhausted sufferer tossed herself from side to side, with the arms extended and cast about in a listless and unconscious manner. Her contracted features, the blanched face, the dilated pupils, and her general restlessness, were too indicative of her dangerous state. I immediately considered it right to request Dr. Ashburner to retire into another room where we might discuss the proper measures. Dr. Ashburner said, if we were hurried we might leave him for an hour; but on our declining to do so, he acquiesced in withdrawing with us. Dr. Murphy and myself of course objected in the most decided manner to sanction mesmeric treatment. Dr. Ashburner expressed the greatest confidence as to the favourable result to be derived from a continuance of it, and doubtless with sincerity. There being no chance of any reconciliation of our opinions, it was deemed best to explain fully to the parents our different views, and leave it to them to decide which mode of treatment was to be adopted under the circumstances. Dr. Ash-

burner had spoken so decidedly of the effect he anticipated from mesmerism, that the parents were anxious he should be permitted a few hours for his treatment; Dr. Murphy and I asserting our readiness to resume the charge of the patient when called on.

At three o'clock in the afternoon, when the time expired which Dr. Ashburner requested for his treatment, the family expressed themselves perfectly satisfied with it. At a quarter past five I was sent for by Dr. Ashburner, who was anxious that I should be convinced by my own observation of the improvement he conceived had taken place. The pulse was hardly to be felt; the jactitation continued; the features more sunken and pale if possible; the pupils were dilated to the utmost, and the intellect was wandering; in fact, all the appearances were presented of pending death, which I (to the astonishment of Dr. Ashburner and the friends) declared to be fast approaching. In the strength of his hopes, the doctor replied, "All that is now required is a continuance of manual labour to complete the recovery." I left the patient with the conviction that she was sinking fast, attributing the cerebral phenomena wholly to the loss of blood. She breathed her last at half-past six o'clock.

At eight o'clock on the morning of July 16th, I made a post-mortem examination, in the presence of Dr. Murphy. I had previously sent word to Dr. Ashburner, of the proposed inspection; but unfortunately he was unable to attend. The surface of the body was anæmic to the last degree, apparently as if all its blood had drained away. The abdomen and pelvis were the only cavities examined. The intestines were distended with flatus; all the abdominal organs were of a healthy structure. The liver, kidneys, spleen, and remaining viscera were empty of blood. The uterus, with its appendages, and vagina, were removed; the uterus was not enlarged, but of a natural size; its cavity was empty, and unstained with blood, as were also the Fallopian tubes; the os uteri was closed, and the vagina was filled with the sponge that had been introduced during life. It was saturated with blood, and many clots were in the passage. On removing the contents there was presented a general softened state of the mucous lining; in some parts it was quite removed from the adjacent muscular coat, and this structure was pale and easily separable by the edge of the knife; ecchymosed spots of blood were seen under it in many parts. There was no appearance of vascular erosion, or of injury from violence; indeed, the diseased state of the lining of the vagina, which was general, negatived such a presumption. The abdominal aorta and vena cava were nearly empty; their coats were healthy.

Remarks.—I should have recorded this remarkable case earlier, if it had not been so much opposed to my general experience, and to the notice of authors, as to induce me to wait for a further illustration and explanation of it in the practice or the observation of others. But I have as yet failed to meet with any exemplification of it

by my friends or in books, and I am disposed, therefore, as at its close, to regard it as an unique case, both as relates to the cachexia or blood disorder, which must have favoured such a profuse and irremediable hæmorrhage, and the limitation of it to the mucous surface of the vagina; for though we cannot but consider the approach of puberty as the determining cause of the seat of hæmorrhage, it assuredly did not come from the uterine cavity or the Fallopian tube, nor was it the result of ovulation. What the exact change be of the nutrition or structure of the vaginal lining that was clearly indicated by the inspection, and of its circulation and capillaries, which caused such great exudation of blood from these, and what the peculiarity of the blood itself, which prevented the arrest of bleeding in the usual way that Nature provides, must be left to the demonstration of future observers, and of such as may be afforded the opportunity of establishing the conditions by the aid of the microscope and of chemistry. Certainly no recognised state of purpura or of hæmorrhagic diathesis, or of mere menorrhagia, can suffice to explain the phenomena of this very interesting, anomalous, and melancholy case. The antecedents of the child's history and appearance are not in accordance with any common or usual causes of a bleeding that was altogether rare and peculiar.

Melcombe-place, Dorset-square, Sept. 1857.

ON A CASE OF EXCISION OF THE KNEE-JOINT.

By JAMES M. MOULLIN, Esq., M.R.C.S.,
SURGEON TO THE WESTBOURNE DISPENSARY.

C. H.—, aged ten years, a pale, delicate, strumous-looking lad, was brought to the Dispensary by his mother, who gave the following history of his case: When six years old, he received a slight hurt at the lower part of the thigh, immediately above the external condyle of the femur, which was followed by inflammation and abscess, leaving a permanent fistulous opening, with occasional discharge of thin, offensive matter. Some time afterwards, whilst at play, he was kicked on the joint by a schoolfellow, causing another and more violent attack of inflammation of the joint, accompanied with pain, for which he went into hospital. The swelling soon disappeared, and he was discharged. He was allowed to run about as usual. The limb became more painful, and he began to limp, and complained of pain when he rested on his heel. About this time he fell down and fractured the affected thigh-bone, at its upper third, and for which he went again into hospital. Soon after being discharged, the difficulty and pain in walking became greater, so that he was quite unable to put his heel to the ground, and rested his entire weight on his toes; the knee also becoming bent and painful at night. Walking gave great pain, and he frequently fell down at the slightest touch.

The knee is bent at a right angle, the head of the femur projecting over the tibia, so that the

latter is dislocated backwards, and firmly fixed. The integument over the patella is ulcerated and adherent to that bone. There is a fistulous opening about one inch above the outer condyle, through which a probe passes into the joint, and dead bone is easily felt. The leg is much reduced in size; the tendo-Achillis firmly contracted, (requiring to be divided,) the heel being in a straight line with the leg.

As the boy was rapidly losing ground, it was decided, upon consultation, if possible, to save the limb by removing the joint, which was accordingly done on the 29th of August. The patient having been placed under the influence of chloroform, the joint was opened by a semilunar incision, including the patella in the flap. The lateral ligaments being divided, the joint presented the following appearance:—Caries of the entire surface of the patella, also of the outer condyle and space between the condyles, the cartilage on the inner condyle being soft and easily removed. There was a great deal of yellow fat in the joint; tibia healthy. The removal of the first slice of bone disclosed an abscess in the inner condyle, and extensive mischief to the outer one; the abstraction of the second portion removed all disease from the inner condyle. I was now obliged to extend the external incision as high as the fistulous opening, and gouge out the entire remaining part of the outer condyle, and a portion of the side of the shaft of the femur. Here the periosteum was detached, and greatly thickened. The patella was removed, as also a thin layer of cartilage from the tibia. The wound was closed by six interrupted sutures, the limb placed in a modification of Price's splint, and cold water dressing applied. There was very little blood lost during the operation, and that principally venous; one artery only required tying. The chloroform caused a great deal of excitement. He was ordered fifteen minims of Battley's solution every two hours, and as much port wine as he could take. He slept well. The pulse, which was 120 after the operation, fell down to 90; no hæmorrhage; limb tumefied.

On the second day two sutures were removed; the wound partly united. Two more sutures were removed each day. Suppuration set in on the fourth day, and discharged freely through the old fistulous opening; otherwise, the incision was quite united on the sixth day, and he has progressed without a bad symptom. He was allowed sixteen ounces of port wine daily, strong beef-tea, chops, milk, and eggs, of all of which he partook freely. Fifteen minims of Battley's solution every night were sufficient to procure a good night's rest; and now all discharge has ceased, the limb firmly united, time only being required for consolidation, and he is rapidly gaining flesh and strength. The limb is three quarters of an inch shorter than its fellow.

Portchester-terrace, October, 1857.

ON A CASE OF PUERPERAL CONVULSIONS.

By HENRY ST. JOHN BULLEN, Esq. M.R.C.S.,

MEDICAL OFFICER TO THE LAMBETH WORKHOUSE.

BRIDGET C——, thirty-two years of age, was admitted into the lying-in ward of this workhouse on the 6th of August last, about six A.M., suffering under symptoms of "delirium." Shortly afterwards I saw her, and found her to be a person of anæmiated habit of body, and to all appearance in the last stage of pregnancy. Contemporaneous with my visit, she had a severe convulsion, which was rapidly succeeded by others at intervals of about ten minutes' duration. No measures were neglected, such as local and general depletion, the application of cold, &c.; and the result was that dilatation of the os uteri commenced, and labour advanced slowly, the vertex presenting. As the convulsions still continued, though at gradually increasing intervals, with the approval of my friend, Dr. Ladd, who accidentally looked in at this conjuncture, I administered chloroform. The effect was most beneficial. In a very few seconds, our patient was completely under its influence, and uterine action increased in such good earnest that in ten minutes or thereabouts from the first exhibition of the anæsthetic, the child was expelled. It was born dead, and had, I conjectured, been so for some hours. The mother had one convulsion afterwards, fell into a deep and prolonged sleep, and awoke the next morning very weak, but perfectly rational and sensible to external impressions, having been the contrary nearly thirty hours. At the end of a month she was perfectly convalescent.

Lambeth Workhouse, October, 1857.

LUPUS EXEDENS OF SEVEN YEARS' STANDING;

RECOVERY UNDER LARGE DOSES OF BINIODIDE OF MERCURY.

By R. HALL BAKEWELL, M.D., &c.

A. B——, aged sixteen, agricultural labourer; a stout, healthy-looking lad. About seven years before admission, a pimple appeared in the inner side of the right nostril. Ulceration took place, which has continued slowly increasing, with no improvement, and seldom stationary, up to the present time. The whole of the cartilaginous portion of the nose, and a considerable part of the upper lip is destroyed; the fœtor of the discharge is very great. His general health is good, but his diet has been poor.

He was admitted under my care into the Penton workhouse. He was placed under a good diet, with a pint of beer a day. The sore was dressed with sulphate of copper lotion, and arsenic given internally. Finding no benefit from this treatment, although the dressings were varied, he was given half a grain of biniodide of mercury, and arsenious acid, one-tenth of a grain, three times a day. In a few days, the amendment was evident, and from this time forward, for the space of three months, the sore continued healing until

a perfectly sound and healthy cicatrix was formed. When about one half of the ulcer had healed, he left the workhouse, and thenceforth attended as an out-patient. Cicatrization after this was not so rapid, owing, I presume, to a change of diet; the quantity of biniodide was then increased to a grain three times a day. After this the progress was most satisfactory.

During the whole of the long period for which he was taking these powerful medicines, he never felt the slightest inconvenience from them; there was neither salivation nor gastric irritation.

Remarks.—It is possible that the recovery in this case might have been a mere accident, coincident with the treatment, but not a consequence of it. The circumstances of the case render this highly improbable. The cure was not effected merely by change of diet, for it continued, though requiring larger doses of the remedy, after his discharge from the workhouse. No sign of ulceration appeared when I last saw him, about six months after the healing of the ulcer. The doses of biniodide given were unusually large, but, in this case at least, the end justified the means.

Five-terrace, Kennington-road, Oct., 1857.

REPORT OF A CASE OF ABSCESS OF THE LIVER AND RIGHT KIDNEY.

By WM. THORN, M.D., Harrow Road.

Mr. W—, forty-five years old, a thin, spare man, of medium height, suffered for many years with paroxysms of pain in the loins, especially on the right side. After each attack of pain, there was always a discharge of pus, which appeared in the urine, and was to be recognised by the usual tests. These occasional attacks were, however, aggravated by the addition of torpor of the liver, produced no doubt by a change in the patient's manner of life, from an active, travelling, to a confined and sedentary mode, and consequently a state nearly approaching to jaundice came on. This went off, and was followed by a smart attack of fever, accompanied by much wasting, perspiration, and pain, and attended also by a profuse discharge of pus in the urine as before. In about a month the patient returned to his usual habits, which, by-the-by, were very temperate, nothing on his part being imprudent, except his sedentary life. He was, however, now very weak, thin, and debilitated, and therefore he was placed upon full doses of iron and dandelion, and had a plaster composed of opium and tartar emetic laid over the region of the liver. Everything now went on well for a time, until, either from the irritation of the plaster or the maturation of the abscess, the patient once more flagged, and had to lay up. The plaster was removed, and linseed-meal poultices applied constantly; carbonate of ammonia, wine, and beef tea were given freely; and after about a fortnight's treatment of this kind the first abscess burst in the night, rather suddenly, deluging the bedclothes. The bursting of this abscess, which was just in front of the liver, did not, however, relieve the patient of his pain and nightly

agony; morphia was therefore given in full doses every night. The discharge kept on profusely; nevertheless, at the end of another three weeks, a second abscess made its way to the surface from behind, from the neighbourhood of the right kidney, and for some days seemed to empty its contents into the open abscess. The pain however continuing, the two abscesses were laid into one, by the advice of Mr. Walton, and at least a pint of matter was discharged from the last. Poultices were continued, and the presence of urine was distinctly ascertained as they were removed from time to time. Quinine was given in full doses, and an occasional aperient, and once or twice a mercurial dose; full diet with plenty of wine was allowed, and the patient has so improved that he has got quite fat, and lately walked a mile with ease and comfort. There is still a small opening in the last or kidney abscess, and the discharge is still coming away in small quantities, but is not urinous; and, guided by the action of Nature in the case, it is not my intention to expedite its closure. Nothing, indeed, seems necessary now, except exercise, good food, and quinine, to carry off a diseased state that has more or less afflicted the patient for the last twenty years. How far the iron internally (see THE LANCET of Nov. 25th, 1854), or the irritation of the plaster externally, has brought about so happy a termination is not for me to say; but, anywise, it is a fortunate ending.

October, 1857.

STRYCHNINE POISONING.

[CASE OF CATHERINE POWELS.]

By GEORGE HAZEL, ESQ., M.R.C.S.

I WAS called on to attend this case on Tuesday, the 23rd Dec., at half-past six P.M. I found the patient lying on her back, stretched out on the floor of the back kitchen, perfectly lifeless, and from the temperature of the body should think she had been dead about forty-five minutes. She had been left in the house by herself at half-past four P.M., and she was found in the position already stated, at six P.M., her arms straight by her side, and every other part of her body in the same straight position, with the exception of her hands, which were slightly flexed on the forearms, the fingers were semi-flexed, and the thumbs drawn in towards the palms. The fingers were rigidly contracted, and when placed straight returned to their former position. The hands and arms presented a livid appearance, and there was a livid colour round the mouth. The features had a calm expression, and were without the slightest appearance of distortion; the jaws were not fixed, and there was no appearance of rigidity of the muscles, so that I could open the mouth with ease, and I perceived nothing particular about the appearance of the mouth or fauces. The eyes were closed; the eyelids could be lifted with ease; the pupils were dilated.

I looked about the apartment to see if there was any drinking vessel or bottles, and on open-

ing her box, which was by the side of her body, I found a bottle on the top of her linen, half full of a whitish powder, labelled strychnine.

Post-mortem examination, fifty-eight hours after death.—There was lividity about the arms and hands, and round the mouth; the rest of the body was pale; no decomposition had taken place. She was a very stout, muscular woman, and of large frame. Her body was perfectly straight, and her limbs flexible, with the exception of the fingers, which still preserved their rigidity. The jaws were fixed, and I had some difficulty in opening the mouth; there was no ecchymosis in any part of the body, nor any evidence of struggling before death. All the organs of the body were in a healthy condition. The lungs were congested, and, on being cut in two, exuded a frothy serum and fluid blood. The heart was large and flaccid; empty on the left side, and full of dark blood on the right. Both cavæ were full of fluid blood, of a very dark colour. The stomach was full of undigested matter; the lining mucous membrane was pale, and presented no redness in any part. The liver was rather larger than natural and congested. Bladder full. All the other organs of the abdomen were in a healthy state. The brain was congested at its base. No serum in the ventricles, but a large quantity of fluid blood in the sinuses.

Analysis.—I took one-fifth of the contents of the stomach, and half of the stomach itself, and conducted an analysis in the manner recommended by Mr. Rodgers and Mr. Girdwood, and reported in THE LANCET of June 13, and produced about three grains of pure strychnine.

Crawley-street, St. Pancras, 1857.

WHAT HAS PATHOLOGICAL ANATOMY DONE FOR MEDICINE AND SURGERY?

By F. J. GANT, Esq., M.R.C.S. Eng.

ASSISTANT-SURGEON TO THE ROYAL FREE HOSPITAL,
LATE SURGEON (STAFF) TO HER MAJESTY'S MILITARY HOSPITALS, CRIMEA AND SCUTARI.

(Continued from Nov. No. page 405.)

THE DIAGNOSTIC VALUE OF CHEMICAL CONDITIONS ALONE, ILLUSTRATED BY CERTAIN PSEUDO TISSUES, AND LYMPH DEPOSITS, AS PUB.

In pursuance of the plan proposed in my last communication, I again proceed to review the present position of pathological anatomy. We have already examined the value of minute structural conditions for determining diagnosis, and we found their insufficiency to arise, not so much from our imperfect knowledge of their nature as from their uncertain co-existence with the same physico-chemical characters. The pathological defect to which I would now invite attention is referable rather to our imperfect acquaintance with the *nature* of many chemical compounds, and their changes; in fact, of Pathological Chemistry.

"What peculiarities of *chemical composition*

co-exist with certain known physico-structural characters combined?"

Now I could not pretend, within the narrow limits of these papers, to fully discuss this question; and indeed my past studies entitle me to do so only with great diffidence; but I seek to discover PRINCIPLES—namely, *the present aspect and future tendency of Medicine and Surgery derived from Pathological Anatomy*. The question proposed cannot therefore, I think, be more appropriately introduced than by briefly reviewing the present state of pathological chemistry.

No one can well dispute the recent but rapid progress of organic chemistry, yet *pathological chemistry* has not proportionally advanced. Not that these departments of knowledge are identical—that the one measures the other; but organic analysis has hitherto been applied to pathological anatomy chiefly with the view of discovering proximate constituents, and their various possible combinations, rather than employed on the *actual products* of disease. Now, the former method of research may be philosophical, but not sufficiently natural, to meet the requirements of practical medicine. This defect is more particularly noticed by MM. Becquerel and Rodier. (*Pathological Chemistry*, 1853; translated by Dr. S. T. Speer, 1857.) This work is specially devoted to analyses of the actual products of disease; and as the investigations of the eminent chemists referred to, may, I presume, be regarded as the most complete and recent expression of pathological chemistry, I venture to adduce the following summary of their labours.

The chemical pathology of diseased normal tissues is regarded by MM. Becquerel and Rodier as unfinished. Thus, of cartilage they observe: "We know of no researches hitherto published respecting this tissue when diseased." Of teeth, brain, spinal cord, nerves, and hair, analyses have been made only in their healthy condition, or, at least, when their state has been but ill-defined. The crystalline lens, in health and disease, is likewise unknown.

Concerning organic products of new formations our authors adduce the analyses of certain deposits, and of one kind of growth. The varieties of cancer-growth are alone considered, and the analyses of encephaloid with scirrhus, by M. Foy; of encephaloid, by M. Baudimont, and of scirrhus, by Collard de Martigny, by Hecht, and L'Heritier, are thus concluded: "To sum up then, we shall merely say that these analyses having been made by different observers, and upon different principles, can scarcely be of any use, inasmuch as their results are, so to speak, analogous to those afforded by the analysis of many other organic changes. Moreover, many chemists have asserted that some of these analyses are similar to those of muscular tissue."

The analyses of pus (deposit) by Guiterbock, Valentin, Golding Bird, and Wood, afford discordant results. Our authors enquire, "Whence these discrepancies? How is it that no two analyses are the same?" "It would be very desira-

ble that numerous analyses of each variety of pus should be made, for we believe that many useful and valuable conclusions might then be arrived at."

The chemical pathology of the blood and other fluids is also pronounced by Becquerel and Rodier to be very imperfect. Indeed, they regard our knowledge of even healthy blood as at present unfinished, especially respecting "the nature of extractive and fatty matters—of salts, organic and inorganic; the changes produced by respiration and nutrition, and the presence of those immediate principles of which its more important constituents are composed." They notice certain chemical changes which the blood undergoes in a few diseases; but they also confess "that there are many morbid conditions of the blood yet unknown," and "how many acute and chronic diseases remain in which the changes taking place in blood are still a mystery."

It would, then, appear that the present aspect of pathological chemistry is, at the best, but unsatisfactory; that our chemical knowledge of certain diseased normal tissues, and of many new products, is still very defective. Now although our acquaintance with physico-structural characters may in some such instances be doubtful, yet in others, such as pus, these particulars have been tolerably well ascertained; and, therefore, the chemical deficiency alluded to may be adduced in illustration of the proposition under consideration.

If, however, the produce of pathological chemistry is for the most part but scanty and immature, there are other tracts of fertile promise where the soil has scarcely yet been turned.

Becquerel and Rodier altogether omit the chemical history of degenerations, and of pseudo-tissues; yet the varied structure of false tissues, no less than of other plastic products, point to corresponding varieties of lymph, from which they were evolved.

Three conditions of lymph may be distinguished by well-marked structural characters: the *fibrinous* and *corpuscular* of Paget, and an intermediate condition, consisting of both *fibres* and *cells*. Similar susceptibilities of organization represent the varieties noticed by Dr. C. J. B. Williams, as the euplastic, aplastic, and cacoplastic.

With such distinctive forms of structure are associated equally peculiar physical properties; Euplastic lymph—transparent, nearly colourless, and tenacious. Aplastic lymph—opaque, yellow, diffuent. Cacoplastic lymph—opakish, yellowish, and less tenacious than the euplastic type. These characters are more clearly contrasted when placed in juxta-position.

LYMPH.

	Fibrinous.	Transition condition.	Corpuscular.
<i>Physical properties</i>	Transparent.	Opakish.	Opake.
	Colourless.	Yellowish.	Yellow.
	Tenacious.	Tenacityless.	Diffuent.
<i>Structure</i>	Fibres.	Cells.	Cells.
	Cells.	Fibres.	Granules.
	Bloodvessels.	Bloodvessels few.	Bloodvessels absent.
<i>Ex. False membranes.</i>		<i>Ex. Cirrhosis.</i>	<i>Ex. Pus.</i>

Now, the qualities of lymph are certainly most obvious when it is effused from simple membranes as the serous—for instance, pleuritic effusions; while the more complex structure of skin and mucous membranes retard its separation, and modify its properties by the admixture of their own secretions. Hence the varied products of skin diseases, and those discharged from the gastro-intestinal canal, the urinary and pulmonary passages. Nevertheless, the peculiarities I have mentioned are fully confirmed by the observations of Mr. Paget, who carefully examined the materials exuded in thirty cases of blister from cantharides.

What, then, is the *chemical* constitution of a material whose physico-structural qualities are so dissimilar, and which yet in each condition retains a tolerably well-defined individuality? It cannot be that products so varied and yet so constant are evolved from the chemical matrix. Such a conclusion would be opposed to both analogy and fact; for by analogy apart from experience, we should infer that varieties of product would indicate corresponding differences of chemical genesis, which, in their turn, perhaps determine the physico-structural characters peculiar to each product. This law appears to lie at the root of all diseases of nutrition. It would be easy to prove a close relation between the chemical composition of blood and the structure of tissues and organs—i. e., the products of *healthy* nutrition. Some original physiological reflections on this subject may be found in Mr. Paget's able lectures ("Surgical Pathology," vol. i.) From *a priori* considerations, we should therefore anticipate a similar pathological parallelism between the composition of blood and structural peculiarities of diseased normal tissues and new products. Mr. Paget particularly invites attention to his own observations and those of Rokitansky in support of this position derived from analogy, and concludes, respecting the products of inflammation, that "if it should appear that the same tissue, inflamed by the same stimulus, will in different persons yield different forms of lymph, we shall come near to certainty that the character of the blood is that which chiefly determines the character of an inflammation." ("Surgical Pathology," vol. i., p. 337.)

Now, I am not aware that any exact analyses have yet been made of euplastic and cacoplastic forms of lymph, while their defective results in respect of pus is attested by Becquerel and Rodier. The composition of certain lymph deposits and that which co-exists with their known physico-structural characters remains, then, still a blank in chemical pathology. We cannot therefore at present thus recognise such products, and refer them with certainty to known chemical conditions of the blood from which they are derived.

Herein consists their *essential resemblances and differences*; and yet we cannot determine their *diagnosis* by an appeal to *chemical analysis* (when available). We might thus associate products whose nature and origin are distinct, or isolate

those which are identical and originate in the same morbid conditions of blood.

THE DIAGNOSTIC VALUE OF CHEMICAL CONDITIONS ALONE, (continued) ILLUSTRATED BY CERTAIN BLOOD-DISEASES, AS SCURVY.

I need scarcely again repeat that our answer to the title-question of these papers is most appropriately introduced by a preliminary review of the present state of pathological anatomy, considered in respect of its structural, chemical, and physical elements. For whatever we may discover in the sequel to be the actual relation of pathological anatomy to therapeutics, its practical application must necessarily be influenced by the precision with which we can *define and distinguish* different morbid conditions. While, therefore, I point out the present defects of pathological anatomy in this respect, I also take occasion to incidentally examine the value of each pathological element for determining the diagnosis of disease, and, therefore, for correcting the deficiencies referred to.

The value of such methods of diagnosis in relation to Therapeutics must, of course, be in proportion to their *availability* during life. I shall return again to this subject; meanwhile, I may observe that all forms of new products, such as false tissues, deposits and growths, also degenerations affecting severally the lungs, stomach, and intestines, the liver, pancreas, kidneys, bladder, uterus, &c., are found in discharges from the gastro-pulmonary and genito-urinary tracts of mucous membrane. Many products situated nearer the surface, although not thus discharged from natural outlets, are yet available for examination by puncture during life.

With these views I examined,—First, our present knowledge of certain morbid *structural* conditions, and illustrated their diagnostic value by reference to cancer and canceroid growths; and in my last paper I introduced the general question of *chemical* diagnosis in connexion with the present aspect of chemical pathology. We thus discovered the imperfection of this method, more especially in its application to various forms of lymph products; but the shortcomings of chemical pathology are not limited to morbid products, they extend also to DISEASES OF THE BLOOD.

The question, "What peculiarities of *chemical composition* co-exist with certain known physico-structural characters?" is further illustrated by our present imperfect knowledge of blood diseases, and perhaps more especially by *scurvy*.

Now I need scarcely argue whether this condition is essentially a disease of the blood, for all pathologists are agreed on this point. The imperfection of the blood, observes Dr. Budd, is the source of all the symptoms, and the cause of all the morbid anatomical changes which are observed in scurvy. The study of this disease is, therefore, most instructive to the pathologist, showing, as it does, the variety and importance of the effects which may result from a primary alteration in the quality of the blood, independently of any morbid change in the solids.

Now the physico-structural characters of scorbutic blood are well known. Thus, it undergoes remarkable and significant changes of colour; from florid red it changes to dark-brown or green; it appears also only half-coagulated, the supernatant fluid being of a livid colour. Again, the red corpuscles have been noticed by Drs. Ritchie and Buchanan to be "more irregular in their outline, more flattened in their discs, and more disposed to cohere with one another, and aggregate into large insulated masses, than those of young healthy blood." (Dr. Ritchie on Scurvy, *Edinburgh Monthly Journal*, July, 1847.) These appearances are denied by other observers, who regard them as either inconstant or altogether absent. Dr. Garrod, for instance, affirms, "that recent examinations have shown that the blood is not in a dissolved state as was formerly supposed, but that the globules are normal in appearance, the clot firm, and frequently buffed and cupped." (*Edinburgh Monthly Journal*, January, 1848.)

The balance of evidence, however, preponderates in favour of the *characteristic colour and fluidity of the blood*, and the *collapse of the red corpuscles*.

We may, therefore, inquire what changes of *chemical composition* coexist with these physico-structural characters? That scurvy consists essentially in a *chemical* alteration of the blood will be evident from a review of its causes and treatment. All the known causes of scurvy are referable to some form of defective diet; while its successful treatment resides in the restoration of this deficiency. But opinions differ, or are even opposed, respecting the nature of this defection. Dr. Budd arrived at the following conclusions:—1st. Antiscorbutic properties reside exclusively in substances of *vegetable* origin; 2ndly, that these properties are possessed in very different degrees by different families of plants; least so by the farinaceous, as wheat, oats, barley; most so by the *succulent*, as the aurantia, comprising oranges and lemons; lastly, by potatoes; 3rdly, the antiscorbutic property is impaired by the action of strong heat, nevertheless boiled potatoes are antiscorbutic (Dr. W. Baly); impaired also by vinous fermentation, but improved, perhaps, by acetous fermentation. Dr. Christison reviews the diet of certain railway labourers who were admitted with scurvy into the Royal Infirmary, Edinburgh, during the spring of 1847: "The general conclusion to be deduced from all these facts, seems to be that no doubt can exist of a tendency to scurvy being engendered by a diet too purely farinaceous or saccharo-farinaceous and fatty; that this tendency cannot be counteracted by even a superabundance of the vegetable nitrogenous principle—gluten, but that it may be effectually counteracted by *milk*, and probably also by other *NITROGENIZED* articles of food from the *animal world*." Dr. Christison adverts to the influence of other forms of diet on the production of scurvy, and amongst them he includes the want of succulent vegetables; but for the most part his conclusions are opposed to those of Dr. Budd. Dr. Christison regards animal casein,

or at least vegetable albumen, as essential to the antiscorbutic diet, and believes that it is to the latter principle, and not, as some suppose, to small proportions of salts with vegetable acids, that the ordinary succulent vegetables owe their undoubted anti-scorbutic properties. Dr. Ritchie inspected the diet of those who were admitted with scurvy into the Glasgow Infirmary during the winter of 1846-7 (*Edinburgh Monthly Journal*, July, 1847) and states that "the general fact in regard to the food of *all* was, that it failed in variety and in the quantity of its *animal constituents*; and that, in all but a fraction of the cases, in which they had been very deficient, the patients had been exposed for months to a total deprivation of *fresh succulent vegetables*." Lastly, Dr. Lonsdale, of the Cumberland Infirmary, enumerates amongst the results of his experience, during 1847, of serving in Cumberland and the southern parts of Scotland, that a *deficiency of potatoes* constituted the chief error of diet, and was the main cause of that epidemic; whilst the absence of variety, and deficient quantity, of food, hastened the development of scurvy.

The researches of Dr. Garrod (*Edinburgh Monthly Journal*, 1848,) seem to be more critical and exact, having been conducted with the special view of determining the precise chemical constituent wanting in scorbutic blood and diet, and present in the antiscorbutic condition. Dr. Garrod's analysis would prove that *potash* is deficient in scorbutic blood, and that the quantity of that alkali thrown off by the kidneys is also less than usual; furthermore, that all antiscorbutic diet and medicine abound in potash, which again is proportionally deficient in scorbutic food. On the other hand, Becquerel and Rodier are inclined to attribute the phenomena of scurvy to an *undue proportion of soda* in the blood, more especially in the chronic form of the disease, and this accompanied with a diminished proportion of fibrin. They thus explain the efficacy of a vegetable acid regimen, unlike the alkaline treatment recommended by Dr. Garrod.

From these remarks it would appear that the chemical constitution of scorbutic blood is still an open question, while its physico-structural characters are well known. Under such conflicting chemical evidence, a man presents himself with the *symptoms* of scurvy. For some time he has gradually lost strength and colour. He now looks sallow and dejected. By-and-bye, red or livid spots appear, principally on his legs, which moreover appear bruised, of a yellowish-green colour, swollen and hard. Our patient may cough up or vomit blood, lose it by the bowels, or occasionally pass it with his urine. His gums look turgid, spongy, and rotten; they bleed on the slightest pressure. These hæmorrhagic tendencies are evidently referable to some altered condition of the blood. In other words, scurvy is essentially a blood disease. But how can we reconcile the discordant opinions respecting its nature? Its *chemical* change is the point at issue. In vain we examine the blood which is vomited or otherwise lost in this terrible malady. Do we find it re-

duced below or raised above its healthy point of alkalinity? Does the blood lack potash, or abound in soda? or do neither of these defects prevail, and is the blood deprived of its due proportion of azotized constituents?

Are there, in fact, *two or more chemical* conditions of the blood, and these of almost opposite nature, associated with the same physico-structural characters and ecchymoses, &c., during life? or do these qualities and symptoms point to one and the same chemical change, as yet undiscovered? Are we to give potash, or acids, or milk, or potatoes, or what?

The truth is,—*we cannot at present identify a disease, the chemical conditions of which are so essential, but as yet so insufficiently known, and apparently irreconcilable.*

This conclusion, again, serves to illustrate the insufficiency of diagnosis derived from *chemical* pathology,—in fact, the present imperfection of *chemical diagnosis*.

THE DIAGNOSTIC VALUE OF CHEMICAL CONDITIONS ALONE, (concluded,) AND ILLUSTRATED BY CERTAIN BLOOD-DISEASES, AS CHOLERA.

THE LAW OF CHEMICAL GENERATION INDICATED.

The history of blood-diseases exemplifies the converse proposition to that which induced the argument of my two last communications. The chemical constitution of diseased *normal tissues* and products was then the question at issue; and so essential is this pathological element to complete our knowledge of structural disease, that when undiscovered or apparently inconstant, we found the insufficiency of other evidence for determining the exact nature of certain morbid conditions. This position was illustrated by varieties of lymph deposit, as false tissues and pus; and by certain blood-diseases, as scurvy. Unhappily, the present state of pathological chemistry limits the application of organic analysis in the diagnosis of these and other diseases; but when sufficient and applicable in certain instances, it *alone* affords the surest means of detecting the *earliest* pathological changes. The more exact diagnosis of certain diseases of the blood, whose physico-structural characters and symptoms are nearly similar, but whose nature is essentially distinct, may be ascribed to the progress of pathological chemistry.

For "what are the *physico-structural* characters combined, which co-exist with certain known chemical conditions?"

The comparative value of chemical evidence alone will be more clearly brought out in our reply to this question. The boundary line between CHOLERA, for instance, and certain forms of diarrhœa, can alone be traced by the results of chemical analysis.

The chemical constitution of the blood, when contrasted with that of the rice-water evacuations, together indicate the essential pathological distinction, at present perceptible between *algide* cholera and advanced conditions of *serous*, *maous*, *bilious*, and even *feculent diarrhœa*, when severally verging on the stage of collapse.

On the other hand, does the insufficiency of evidence derived from the physico-structural characters of the blood (and other tissues, as of the gastro-intestinal mucous membrane) arise from their *inconstant* co-existence with certain known chemical conditions, or from such characters not being *peculiar* to cholera?

Now, respecting physical peculiarities, Drs. Baly and Gull (in their Reports on Epidemic Cholera, 1854) describe the blood as *dark and less coagulable* than in other diseases, though sometimes containing imperfect fibrinous clots. Dr. Parkes gave similar testimony in 1847. Dr. Lindsay (of Perth) appears to me, however, to have very carefully investigated this subject, and he has never seen the tarry viscid condition of the blood formerly so frequently described. "I have certainly found it *sometimes* dull in tint, dark in colour, grumous, and very fluid, showing no tendency to coagulate; but, on the other hand, it more frequently contained abundance of *decolorized clots*." Again, Dr. Gairdner (a very competent authority) denies also that the blood is dark and venous, and affirms that it coagulates within the vessels much the same as in other diseases. Lastly, to conclude this question. Dr. Lindsay failed to discover any difference between the blood in cholera and that in a multitude of affections where pulmonary obstructions of any kind have prevented its due or ordinary oxygenation.

Nor, again, as regards structural peculiarities, do the blood-corpuscles undergo any peculiar or constant structural change. In only one of Dr. Lindsay's cases did the white corpuscles appear superabundant. In only a few instances did the red discs present some irregularity of outline, passing also from the round to a caudate or otherwise elongated shape, with occasionally a disposition to coalesce more readily than usual. But, according to Virchow, no actual destruction or disintegration (a very important change) of the corpuscles has been seen; while Dr. Parkes failed to detect any alteration in their shape, or any undue tendency to run together, but observed that in some instances they actually appeared isolated, and even less prone than usual to form rouleaux.

No definite conclusion can be drawn from these conflicting observations, although perhaps their discrepancy may be somewhat reconciled on the supposition of their having been made in *different stages* of the disease.

At present, therefore, we cannot recognise the blood of cholera by its physico-structural characters alone. For similar reasons we must exclude any pathological evidence afforded by the gastro-intestinal mucous membrane, the liver and kidneys. All these structures, moreover, are only secondarily involved.

We must, therefore, look to the altered *chemical* composition of the blood; and an analysis of *symptoms* (observed during life) again refers us to its chemical conditions for the *essential* diagnosis of cholera and other forms of diarrhoea.

A man suffers for some days from copious bilious diarrhoea—the common autumnal cholera of

this country. At length, though perhaps gradually, his skin feels cold and clammy, (sometimes dry,) loose also and shrivelled; while its usual pink colour shades off to a dusky blue tint, more obvious about thin prominent parts, as the fingers, ears, nose, lips, and around the eyes, which look moreover suffused and sunken. So much for outward appearances. Meanwhile his pulse grows more feeble, and at last scarcely perceptible; for although the heart beats forcibly, yet is the blood now too viscid from prolonged evacuations to be adequately propelled. The breathing is therefore hurried and oppressed, while the cerebral functions are blunted and obscured. These symptoms are alike the consequences of an enfeebled circulation—the symptoms of *collapse*. Under similar circumstances it may be that a *whitish flocculent fluid*, resembling rice-water rather than bile, is expelled from the bowels. Pint after pint, and quart after quart, may be thus discharged at short intervals, and apparently quite involuntarily, yet suddenly and often with great violence, as from a tap; at the same time a stream of fluid, white or green, is copiously spirted from the mouth, and thrown to some distance, without, however, any straining effort. How much the *volume* of the blood is thus reduced must be obvious. No mere drain of bile could produce such marked collapse. Hence the more enfeebled circulation, which the heart labours in vain to restore—hence the livid, cold, and shrunken surface, the oppressed breathing, and fatal lethargy, of Asiatic cholera. The poor victim, around whom the shades of death are closing, may indeed for a time be restless and disturbed, but soon an apathetic indifference steals over him, from which perhaps he is roused only by cramps of the legs, thighs, and belly. With these he may cry out in a hollow and sepulchral voice for drink. A ferocious thirst instinctively prompts his entreaties for water, wherewith to supply the reduced volume of blood: apt proof of a natural restorative tendency. But water is not blood, but only one of its components. The evil lies deeper. Examine the rice-water evacuations, and we at once detect those materials which the blood has lost; look to the blood itself, and we further discover the absence of these constituents, and the presence of those excretions which ought to have been thrown off, but are now retained. In other words, *the composition of cholera evacuations, when contrasted with that of the blood (in this disease) affords the surest evidence for our diagnosis of collapse from Asiatic cholera, and that arising from bilious diarrhoea—the common autumnal cholera of this country.* An analysis of their pathological anatomy and symptoms conducts us, by *exclusion*, to this conclusion: the rice-water evacuation is the only symptom peculiar to, and constant in, the collapsed stage of Asiatic cholera.

True it is that similar evacuations occur occasionally in phthisis, and even in chronic dysentery; but then these diseases differ from Asiatic cholera in other and more important particulars. Our diagnosis is not then reduced to chemical evidence

afforded by the evacuations. It is between choleraic and other allied forms of diarrhoea that the chemical nature of the evacuations affords conclusive evidence of their identity, or difference. While, therefore, the presence of such evacuations indicates Asiatic cholera, so must their composition indicate the corresponding change which the blood has undergone.

What, then, is the relative chemical composition of ricewater evacuations and of the blood in this disease? Now the elaborate researches of Dr. Dundas Thomson prove—firstly, that these evacuations, whether alvine or vomited, consist largely of *water* and *common salt*, with a small amount of *albumen*. This fluid has indeed a precisely similar composition with that secreted by serous membranes in hydrocele, hydrocephalus, and other forms of dropsy. Secondly, respecting the blood: that its water is reduced from 7 to 13 per cent. The proportion of solids to water contrasting thus:

Health	1 to 3.91
Cholera	1 to 2.62

This relative excess of solid matter is due, I presume, to the large amount of water withdrawn. Accordingly, while the total amount of salts may rise as high as 12.56 in 1000 (Thomson) above the average of 7.50 in 1000, yet the soluble salts remaining in the blood are proportionably less than the *insoluble*. These results are fully corroborated by the more recent, though limited, observations of Becquerel and Rodier.

The chemical balance of the blood's ingredients is thus destroyed, and the results of chemical analysis alone are at present our surest guide in the diagnosis of cholera and allied forms of diarrhoea. This conclusion is corroborated by the comparative result of different modes of treatment. The administration of salts, first suggested by the late Dr. Stephens, was adapted by Dr. Marsden at the Royal Free Hospital with considerable success. Compared with other modes of treating the collapsed stage of cholera, it afforded the happiest results. Of eighty-one cases, seven died, and *seventy-four recovered*. The combination of salts used was—*Common salt*, two drachms; carbonate of soda, one scruple; oxymuriate of potash, seven grains. Now this formula nearly corresponds with the salts discharged from the blood, and discovered in the rice-water evacuations. Chloride of sodium is the prevailing ingredient removed from, or restored to, the blood. Here, therefore, therapeutics confirms the diagnosis derived from chemical pathology.

But the application of chemical analysis to pathology, and more especially to blood-diseases, has hitherto presented only scanty results. Indeed, of all morbid tissues and organs, our knowledge of blood diseases is most in arrear. I cannot doubt that some such diseases have hitherto altogether escaped detection; of others, that our knowledge is very imperfect, and we know not the mutual relation of its chemical, structural, and physical conditions. Nor are these defects sur-

prising, for the blood, as the common parent both of healthy and diseased products, manifests its variable composition and endowments by such results; and it is only, therefore, when its offspring have so far developed their characteristic peculiarities as to indicate corresponding differences in the blood which gave them birth that we are apprized of the prior changes which that fluid must itself have undergone. For the further elucidation of this most important question, let us look forward with patient hope to the future revelations of pathological chemistry.

Passing on now from the individual to the general application of chemical diagnosis, let us inquire, *Can we reconcile the discrepancies of chemical analyses*, and establish, moreover, *any relation between variable chemical conditions and certain physico-structural characters*? For the diagnostic value of chemical conditions must be seriously affected by the constancy or inconstancy of this association. Thus, for instance, Rokitsansky* refers to the association of different structural conditions of fibrin, with Mulder's gradations of protein oxidation.

Now this relation, of course, assumes the individual existence of protein as the *basis* of a series of fibrin products; and affirms, moreover, that its successive stages of oxidation coexist with certain physico-structural conditions (of fibrin). I would call this the *LAW OF CHEMICAL GENERATION*: a very important one, if true, for it introduces the general application of organic radicals (proximate principles) to chemical pathology. By this law we might trace the successive evolution, or chemical generation, of morbid products, from certain, perhaps only a few, proximate constituents. We might thus ascertain the relation of the chemical changes of morbid products to their composition. This, then, would be an analogous law to that of structural retrogression, by which I shall hope, in a future number, to more fully reconcile the variability of anatomical characters, and to extend thereby their value in the diagnosis of structural disease. So the law of chemical generation might similarly aid chemical diagnosis. We may, therefore, very advantageously pursue this inquiry.

With this view, it must be admitted that our knowledge of the chemical changes which any given compound undergoes—its various changes by combination and decomposition—implies our previous knowledge of its *composition*, which is itself thus supposed to *change*. In other words, the science of chemical decomposition etc. necessarily implies that of composition. This, then, is the relation of these two great departments of chemistry—the dynamical and the statical; and a similar constitution might be discovered in other physical sciences. Now, this relation refers the law of chemical generation to the results of chemical analysis. Unfortunately, however, the application of the latter to pathology has hitherto proved comparatively barren and unprofitable.

* Pathological Anatomy, Sydenham Society's Translation, Vol. 1, p. 96.

This conclusion is sufficiently proved by the brief review of chemical pathology which I have already adduced from its most recent expression by Becquerel and Rodier. Chemical analysis has hitherto been applied to pathology, not so much to examine the *actual products* of disease, but rather to discover their proximate principles and their various possible combinations.

The rise and fall of one such proximate constituent and theory thereby of chemical generation—as applied to physiology—may be told in a few words. A distinguished chemist, Mulder, once thought he had isolated a substance consisting of $C_{10} N_5 H_{31} O_{12}$. He conceived that this compound, acting as an element, combined with different proportions of sulphur and phosphorus, and thus gave rise to certain animal and vegetable substances—albumen, fibrin, casein. He therefore named the compound in question, *PROTEINE*, for it seemed the proximate element or basis of a whole series of compounds. This series was therefore called the protein, or sometimes albuminoid compounds, from albumen being regarded as their type. These compounds, moreover, directly form blood, and were therefore appropriately named sanguigenous; while, again, the various organized tissues being produced from blood, the protein compounds were also named plastic elements of nutrition. This, then, was a most valuable discovery—no less than a clue to the whole chemical history of nutrition, and indirectly, therefore, to that of diseased products. Hence the supposed identity of certain structural conditions of fibrin with Mulder's oxides of protein.

Unfortunately, however, subsequent researches prove (amongst other objections) that no such substance as Mulder's protein exists without sulphur, and that protein itself can only be regarded as one of the first products in the decomposition of albumen, fibrin, or casein, when heated with potash, or other strong caustic alkali. The protein theory of chemical generation thus subsided.

Nor are the discordant results of organic analysis, and therefore the *discrepancies* of chemical diagnosis founded thereon at all surprising. For when bodies enter into combination, their individual properties are lost, or become altogether imperceptible, and there is nothing then left to indicate their presence in the resulting compound. When substances are again liberated by decomposition, they recover their individual properties, and become again perceptible to our senses.

Meanwhile, when combined, substances are temporarily *withdrawn from our sight*. Sulphur and mercury, for instance, are very readily recognised, each by its own physical properties; they combine, and together form cinnabar, a substance possessing the properties of neither. Who would ever suspect the presence of either sulphur or mercury? Yet the resulting compound, when heated, yields up these elements again. Now, if the simple union of only two bodies thus temporarily obscures their presence, how far less likely are we to detect the numerous ingredients of mixed organic products. Look at

the varieties of pus: What is its essential composition, and what different conditions of blood do its varieties indicate, apart from those produced by the admixture of adjacent tissues?

To meet the requirements of practical medicine, we must begin with morbid products as they are presented to us during life (at the bedside) and after death. Yet herein lies our difficulty. For the phenomena of other physical sciences, as mechanics, are more obvious; whilst the very term "composition" (or combination) expresses the withdrawal of bodies *beyond the reach of vision*. Even an appeal to vital properties may occasionally elicit signs (or tests) of chemical composition, themselves more obvious than those presented by analysis. Thus, the vital contractility of a piece of muscle, when dipped in a solution of strychnine, responded to the presence of only $\frac{1}{10000}$ part of a grain of that substance—one of the last records of Marshall Hall). Even the eye itself may detect substances which chemical analysis has failed to disclose. To this circumstance must be attributed the success of Dr. Hassall's discovery by the microscope of the adulterations of food and medicine.

Chemistry, unhappily, possesses not this resource, but, in fact, owes its existence to the impossibility of thus detecting the presence of substances when combined. *It is, essentially, the science of the shortsighted, the art of the blind.*

(To be continued.)

ON A CASE OF ENCEPHALOCELE.

By J. ZACHARIAH LAURENCE, Esq., F.R.C.S.

IN the thirty-ninth volume of the "Medico-Chirurgical Transactions" I have given the details of a case of encephalocele, together with a *resumé* of all that is known of this disease, derived from the consideration of upwards of eighty cases—all, I believe, that have been recorded up to the publication of this, the second case I have met with in my practice.

Mrs. W—, of Guildford, was delivered on the 3rd of April last, of a female child that was born with a tumour at the back of its head. During her pregnancy she noticed an unusual prominence of the abdomen. The labour-pains continued a week; but it was only for the last two days and nights that she was in strong labour. The waters were very copious. She had had three children by a previous marriage: one was still-born; one died from diarrhoea in its infancy; the third one, whom I saw, is a remarkably fine girl, eleven years of age. Mrs. W— herself is thirty-one years old, a good-looking, healthy young woman.

I first saw the child on the 19th of July. Depending from the back of the head was a large tumour, which was somewhat pedunculated, and originated from the occipital, nuchal, and supero-intra-scapular regions. It measured from before backwards, above, eight inches; in its greatest transverse circumference, one foot, six inches; in its greatest longitudinal ditto, one foot, six

inches. At birth it was about half these dimensions. The general form of the tumour was somewhat conical; it was lobed on its surface, more especially on the left side. The skin covering the tumour was not notably different in colour from the rest of the skin of the head, with the exception of some pale blue spots (venous dilatations). The whole tumour fluctuated freely under the fingers, and the fluid-wave excited by succussion was felt transmitted equably in all directions throughout the mass. It was, moreover, translucent, like a thin-walled hydrocele; the flame of the candle lighting up every part of the tumour to a degree that indicated the absence of any considerable solid contents. At the same time the wall of the tumour was seen to have a reticulated structure, resembling a thin fasciculated urinary bladder.

One very remarkable feature was, that the base, particularly on the left side, was clothed with dark, silky hairs, which were upwards of an inch and a half long, several times longer than the hair on the child's head.

A general idea of the above appearances will be derived from a glance at the subjoined wood-cut—a reduced copy of an oil painting of the case in my possession.



buminous. Not a single drop of blood was lost in the operation, nor did the child evince the slightest sign of pain; on the contrary, it smiled, and took the breast whilst the fluid was being drawn off. At last, however, it cried a good deal, which was soon accounted for by its vomiting up a large quantity of tenacious, white fluid (milk and mucus), containing also some entangled air, which burst out in large bubbles from its mouth. After this it seemed relieved, and went to sleep.

On the completion of the operation, the tumour had collapsed into a sac, which, as far as I ventured to examine its contents, was empty.

A week after the operation I found that no meningitic symptoms had manifested themselves, but that some fluid had re-collected, to the extent of about four ounces, in the sac; I now felt dis-

The child was thin and puny, but not otherwise deformed. The cranium was somewhat small at the frontal and vertical regions, but still tolerably well-formed; the forehead did not recede; the anterior fontanelle was of the usual size. The infant did not exhibit any signs of mental deficiency, but, on the contrary, smiled, and took notice of objects. The pupils were natural; vision perfect, but there was a convergent squint, especially of the right eye. The limbs, as I repeatedly observed, were neither paralysed nor contracted. For the last two months the child had been troubled with vomiting of its milk, and derangement of the bowels; and three days before I saw it, it had a fit, characterized by stiffness of the limbs and fixedness of the eyes. On August 17th I saw the child for the second time, and found it had gained flesh, but was still troubled with the disturbance of the digestive organs.

With the assistance of Mr. H. Taylor, of Guildford, I punctured the tumour at the apex below, and to the right (where the skin was most tense, and no venous enlargements or hairs existed), with a very fine trocar, and drew off gradually in the course of about ten minutes, exactly two quarts of a thin, limpid, straw-coloured fluid, which was alkaline in its reaction, and highly al-

tinently that a small *solid* tumour was present at the pedicle of the sac, in all probability the cerebellum.

Devonshire-street, Portland-place.

ON A NEW ARTIFICIAL FOOT FOR CHOPART'S AND SYME'S OPERATION.—WITH REMARKS ON A NEW LAW OF MOTION.

By KENNETH H. CORNISH, Esq., M.R.C.S.

THAT the operations of Chopart and Syme on the foot have failed to produce the results anticipated by them is now pretty generally admitted, and they are consequently far less frequently performed than formerly, since surgeons find that after the stumps have healed, and the patients have commenced walking on that part of the

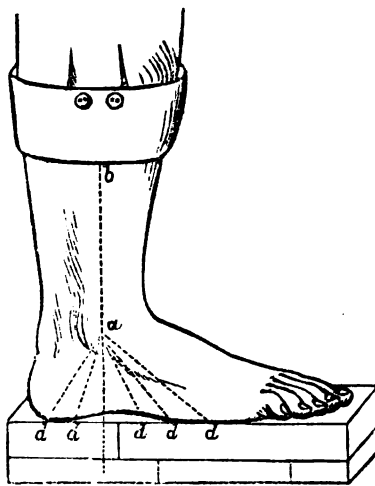
foot which has been preserved, *they almost invariably complain of feeling pain at the anterior and inferior part of the stump.* This of course is caused by the line of gravity passing through this point. Now, for my part, I think that these operations are, *per se*, good; for independently of other considerations, they are in accordance with one of the soundest principles of modern surgery, (if applied with discretion;) I mean that which enjoins the saving of as great a portion of a limb, &c., as can possibly be effected. I believe that the real reason why these operations have not given satisfaction to patients or surgeons, so far as regards comfort and locomotive powers, will be found to depend simply on this: "that the artificial appliances resorted to for the supply of the lost parts have hitherto been constructed on unsound and unphilosophic mechanical principles." I imagine, too, that the operation for excising the knee-joint may possibly fall into disrepute for a like reason, unless some great advance be made in the construction of "artificial knee-joints." So much for my premises, and now I must endeavour to prove that they are correct.

It is universally admitted that in every articulation there is "a centre of motion"—a point which does not vary, yet is not—an imaginary *punctum*; but I am unable to find anywhere allusion to a very singular circumstance in connexion with this said "centre of motion," and I therefore hazard the results of my observations with much diffidence. I believe that it will be found "that in every joint or articulation, whether in man or the lower animals, the line of gravity which passes through such articulation, when the animal is in its natural erect and stationary posture, will pass through, and coincide with, the centre of motion, and that all the forces which act upon the articulation, or joint, *must* pass to or from the centre of motion prior to their final distribution, and this, too, in every normal position of the joint." But it is not to higher organizations only that the law is applicable. I believe, that it will be found to a greater or less extent pervading the whole animal creation; perhaps even the vegetable. I cannot but fancy that some such idea was floating vaguely in the philosophic mind of Goethe when he conceived his "Vegetable Archetype," (or, perhaps more correctly speaking, "*Prototype*,") never, alas! clearly eliminated; sufficiently crude to be jeered at by fools, talented enough to excite the envy and emulation of the really learned. Most certainly will it be found in every detail of that wonderful ideal "Vertebral Archetype," eliminated by our own Owen. Wonderful, I say, because arrived at by a series of inductions unexampled in the history of science—*inductions* so carefully made, so dependent one upon the other, as to appear *absolute deductions*. Wonderful because it has rendered the chaos of comparative anatomy clear to the youngest student amongst us; for is not the science now reduced to a simple serial demonstration? However, the length of this article forbids my indulging in speculation on this point,

though I would fain do so. My present remarks must be confined to the consideration of the ankle-joint. Yet I may as well remark, that the corollary which one might fairly draw from my proposition with respect to the coincidence of the forces and line of gravity with the centre of motion of a joint is, "That when this coincidence (through disease or other cause) no longer exists, the motion of the joint will be impaired until the coincidence has been in some way restored." I may fairly cite dislocations and clubbed feet in support of this assertion.

When a man stands erect on both legs, his weight falls vertically on the centre of motion of the ankle-joint, whence it passes through the astragalus, the keystone of the great antero-posterior arch of the foot, to the bases of the piers of the arch, by radii of force proceeding in various directions from the centre of motion: thus—

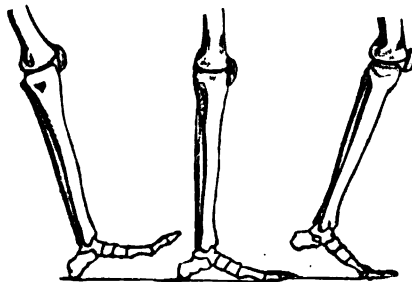
FIG. 1.



a, Joint of external correspondence with the centre of motion of ankle-joint.
 b, a, Line of gravity.
 d d d, Radii of force diverging from a.

In this case the weight, or force, is evenly distributed over the whole arch; but in walking, or running, it falls in a very different fashion, *for it*

FIG. 2.



is evenly distributed only at that particular point of time in which the bases of the piers are in the same plane. In walking, the weight falls first upon the hindmost pier, the heel; it then gradually becomes more evenly distributed as the other

pier nears the ground, and after passing the point of even distribution, the weight begins to be more and more thrown on the anterior pier (Fig. 2).

In running, the weight falls, in the first instance, on the anterior pier, and a mechanical process takes place very similar to that gone through in walking, with this difference, "that it proceeds from in front backwards." I have already stated it as being a very remarkable fact, that in all the various positions assumed by the ankle-joint and foot during the phenomena of walking or running, the lines of gravity always diverge to their final distribution at one particular point, "the centre of motion." However great or small the angle of divergence may be, it invariably takes place at this point, and no other; and this is highly significant. It is not confined to the ankle-joint. We find it in all, whether of the trunk or the extremities; in fact, wherever there is a separate centre of motion. Indeed, were the body otherwise constructed, it would be absolutely impossible for various joints to harmonize in the performance of the simplest functions of life. We could not perform acts of prehension with our upper, of locomotion with our lower, limbs. Without these laws of mutual dependence and harmony between centres of motion and forces acting on them, we should be in far worse case than the worms that crawl, or the limpet that clings. No light would strike upon our eyes, our tongues would refuse to speak, our ears to hear; we should not be able to masticate our food, for this process is performed by the harmonious action of innumerable forces; we could not till the ground with our hands; our feet would move more painfully and slowly than those of the tortoise or sloth; our hearts would contract irregularly, if at all; no sensations would be impressed upon our brains. Instead of glorifying God as the noblest and most highly-organized of the innumerable creatures of his will, man would sink into a revolting and useless mass of scarce-organized brutality.

In the normal state of the foot, when the weight falls vertically on the great antero-posterior arch, I find that the distribution takes place in the following manner: it passes through the tibio-fibular system till it reaches *a*, the centre of motion; at this point radii of force diverge to the various parts of the arch, proceeding, of course, from the centre, *a*. And if the weight is thrown unevenly, so that a greater part, or the whole, falls on one of the piers of the arch, *there is no change in the position of the centre of motion, or its coincidence with the line of gravity which still passes to it, although at a different angle, and the radii of force still diverge from it, but no longer equally.* When the heel alone rests upon the ground, the divergence of force is almost entirely directed backwards; when the anterior part of the foot, forwards; still, in either case, there is no change in the position of the centre of motion at the ankle-joint—the point from which the forces diverge. What do we find, though, if the whole or a portion of either of the piers be taken away?

Why this. Say we take away the anterior pier, as is done in the operations upon which I am treating; we shall find that the line of gravity (when the patient is standing erect) will no longer pass through the centre of motion, but in front of it, and that it will fall to the ground through the base of the broken pier. The astragalus, the keystone of the old and perfect arch, is no longer the keystone in the new and broken one; and, if my theory be correct, all the forces which act upon the joint will, in such case, pass to and from some point in the new line of gravity, instead of the normal centre of motion, and the functions of the joint cannot but be seriously impaired by such an occurrence.

The question, then, resolves itself into this—How can the "line of gravity" be made to coincide with the normal "centre of motion"? I will endeavour to make the solution of the problem clear.

In the first place, it will be requisite to *throw back* an artificial heel, so that a good broad base of support may be obtained, and the weight of the body, when the foot is first put to the ground in walking, may pass through a sound uninjured part.

In the second, that as much of the sole as is left must be kept slanted upwards and forwards, so that the point of the heel may be the *lowest* part of the stump; we thus prevent the radii of force from passing through the tender point, the anterior and inferior angle aforesaid. In old cases it may be necessary to divide the tendo-Achillis, and to treat the case as one of talipes equinus, prior to the application of my apparatus; since the tendency to contraction of this tendon, and consequent tilting upwards of the heel, has always been very marked after these operations of Chopart and Syme.

Thirdly, all pressure on the front of the stump must be avoided.

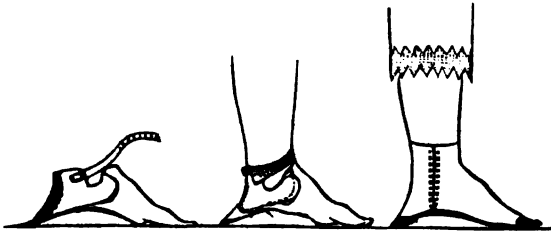
Fourthly, a new anterior pier must be formed, in such a manner that the weight of the body may fall upon the keystone of the arch, which said keystone will of course be beneath the centre of motion, and, like it, coincident with the line of gravity.

The chief difficulty rests in the determination of the extent to which an artificial heel should be thrown backwards, and the point at which the anterior pier should commence. I am at present unable to give any mathematical formula by which these points could be ascertained with precision, theoretically; nay, I fear that such formula can never be obtained, because no two feet in different individuals are constructed with arches of similar proportions. Ethnologically speaking, too, the differences as regards the foot are exceedingly marked—e. g., the splay, hammer-shaped foot of the Negro, and the beautifully-arched one of the Spaniard or Mexican. Practically, there would be little difficulty, as it would be very easy to make an instrument capable of gauging or measuring the required arch in any particular case.

Although I felt pretty confident that my views were correct, mathematically and anatomically, yet I had doubts whether they could be practically carried out; and on this account I consulted Mr. Bigg, of Leicester-square, whose practical knowledge of surgical mechanics, as applied to the construction of artificial limbs, is necessarily very great. I was much pleased on being informed by this gentleman that he saw no practical reason against the general adoption of my plan, and, moreover, have to thank him for more than one valuable hint with respect to the details of the proposed appliance. I have placed in his hands a model and drawings, and trust that ere many weeks have elapsed I may obtain such happy results as I anticipate. Perhaps I am rather *exigant*, but I shall not be satisfied till I have seen a patient who has undergone Chopart's or Syme's operation, at least walking well in the regular heel-and-toe fashion; and I really see no reason why a man who was a good skater or dancer previous to the operation, should not be enabled to dance or skate tolerably with the help of an artificial foot.

One great point I expect to gain,—viz., to do away with side supports, and all other mechanism above the ankle; another, that, by making use of a foot instead of a boot, I shall enable the patient to wear any kind of foot gear, and thus diminish his expense in this matter considerably; the only difference in the construction of the boot or shoe for the natural and the artificial foot being that, in the one, the heel would be made in the usual solid manner,—in the other, hollowed out for the reception of the artificial metal heel. Annexed is a drawing of the artificial foot; another of the appliance when fitted on to the stump; and third, of the appearance which the foot would present when enclosed in a boot. For

FIG. 3.



these drawings I have to thank my esteemed friend W. H. Jones, Esq., B.A. Dublin, clinical clerk to Dr. Bence Jones at St. George's Hospital. The whole of the appliance will be constructed of metal (either brass or white metal), lined, where necessary, with leather. I think it is advisable that the springs composing the anterior pier should be curved in a waving manner, as forces and shocks are much broken thereby, and a great addition of power is obtained. I have also borne in mind the necessity of obtaining a lateral arch for the foot, as well as an antero-posterior arch. Whilst on this subject, I may state that in the normal foot the radii of force proceed to the lateral arch from the same centre of motion as

those radii which go to the antero-posterior bridge. I have carefully provided for the integrity of the front of the stump; there cannot even be friction against it; and all the force of the springs which go to make the upper part of the arch of the foot (vulgo) impinges upon the malleoli. I need scarcely observe that it is most essential that the metal socket be very accurately moulded to the stump, especially around the malleoli. I trust that I may be able to show, in another paper, how these principles may be applied with advantage to the construction of artificial legs; and consider myself fortunate in having been able to secure the aid of so talented a mechanic as Mr. Henry Bigg, for I have never seen any appliances in which strength and neatness are so happily combined as in those which are executed at his establishment.

Mount-street, Grosvenor-square, 1857.

A Mirror OF THE PRACTICE OF MEDICINE AND SURGERY IN THE HOSPITALS OF LONDON.

Nulla est alia pro certo noscendi via, nisi quam plurimas et morborum et dissectionum historias, tam aliorum proprias, collectas habere et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.* lib. 14. Proœmium.

UNIVERSITY COLLEGE HOSPITAL.

SUPPURATION OF THE KNEE-JOINT, WITH SUBSEQUENT CARIES OF THE HEAD OF THE TIBIA; PRESERVATION OF THE LIMB.

(Under the care of Mr. ERICHSEN.)

A BLOW from an iron hoop, in a strumous boy, was sufficient not only to produce active inflammation of the knee, but actually to give rise to suppuration in the course of ten days. The formation of an abscess in such large joints as the knee and hip necessarily renders the prognosis serious, and we thought at one time the boy's leg would have been taken off. The free evacuation of the matter, however, was followed by good results, but with drawback of necrosis of the head of the tibia, which was removed by the gouge to the extent of a handful of fragments. This condition of the tibia seemed to relieve the disease of the joint, and was followed by ankylosis. The boy is still an out-patient; the wound is not completely healed, and seems to have become indolent; the probe does not detect any further dead bone, and a back splint is still applied. Now although ankylosis may become complete, the state of the tibia is by no means promising, in such a diathesis as is present in this patient. Excision of the joint, unfortunately, can never be entertained, if active measures should hereafter be required, as the state of the tibia will prove an obstacle to the operation. We avail ourselves of the following abstract from the notes of Mr. W. E. Allen, the dresser of the patient:—

William C—, aged fourteen, of strumous appearance, was admitted on the 8th of April. Ten days previous to his admission he trod on an iron hoop, which rebounded and hit the inner side of his left knee. The joint became swollen and painful. Fomentations and cupping were used.

On admission (April 8th) the boy complained of throbbing pain in the joint, which was considerably swollen and red; fluctuation was perceptible below and on the inner side of the patella. There was considerable constitutional disturbance.

April 13th.—Mr. Teevan, the house-surgeon, made an incision along the inner border of the patella, whereby a large quantity of pus was evacuated.

17th.—On pressing the inner side of the joint, Mr. Erichsen found that pus welled up. The ligaments were very lax, and the bones, when rubbed against one another, imparted a sensation like that produced by rubbing the knuckles together; they did not give the usual sensation of bones deprived of cartilage.

21st.—Mr. Erichsen enlarged the wound which had been made to evacuate the pus. A grating of articular surfaces very distinct.

27th.—Hectic appearance of patient very marked. He feels better, however, and his appetite is good.

May 23rd.—The wound has completely healed, with the exception of one or two fistulous openings, through which there is a constant discharge of pus. On passing a probe through one of these fistulae, Mr. Erichsen found dead bone in the head of the tibia.

27th.—The patient was placed under the influence of chloroform, and the requisite incisions being made, Mr. Erichsen, by means of the gouge, removed a handful of carious bone from the head of the tibia, leaving but a very thin shell of bone next the joint.

June 2nd.—The cavity in the head of the tibia is filling up rapidly.

30th.—The cavity is almost filled up; the wound has been slightly affected by sloughing phagedæna, which was arrested by the application of nitric acid, and healthy action restored. A splint was placed along the back of the limb, and a starch bandage to fix the joint.

From this time the patient rapidly improved, and on the 9th of August he was discharged as an out-patient, the wound being all but completely healed.

ST. MARY'S HOSPITAL.

NECROSIS OF THE TIBIA IN A BOY, EXTENDING TO THE HEAD AND EPIPHYSIS; AMPUTATION AT THE KNEE-JOINT; RECOVERY.

(Under the care of Mr. LANE.)

We noticed in an earlier part of this year, the performance of amputation at the knee-joint, by

Mr. Fergusson, at King's College Hospital, on a young lad with necrosis of the tibia, which ended in the most complete success, with the possession of a firm, strong, and excellent stump. We again had the opportunity of seeing this operation performed, at St. Mary's Hospital, on the 16th September, by Mr. Lane, upon a boy about eight years of age, who had disease of the head of the tibia, extending into the knee-joint. It most probably commenced as true necrosis, with the formation of an abscess in the head of the bone, matter from which now exuded from a fistulous opening below the tuberosity of the tibia, not unlike the case above recorded, in University College Hospital. The integuments around were quite sound; Mr. Lane, therefore, determined, when the boy was on the operating table, to amputate at the joint, which was effected by first making a good covering to the condyles of the femur from a long anterior flap, then a short posterior flap to draw the former backwards; this was the more important, because the patella was retained, it being found, together with the condyles of the femur, perfectly healthy, the articulating cartilages of each not being in the slightest degree impaired. The disease, as was anticipated, was confined solely to the tibia, the head of which, with the epiphysis, being extensively destroyed, the diseased action extending to the shaft of the bone lower down. The ulceration of the cartilages was very extensive, with erosion of the osseous structure, but not as yet extending to any other part of the joint. The operation, therefore, was judicious and well-timed, and when the parts were brought together and sutures applied there was promise of an excellent stump.

We have seen Mr. Fergusson, when performing this operation, not only remove the patella, but also a slice from the articulating surface of the condyles,—a feature most essential in any articulation, as especially influencing the ultimate result of the operation. It will be very interesting, however, to watch the termination of Mr. Lane's case, because if a useful stump is obtained, without any inflammatory complication, it will be encouraging under similar circumstances to leave two articulating surfaces in contact. Plenty of integument is required to cover such broad surfaces as the condyles, and we were under the impression that the anterior flap would hardly prove sufficient, more especially as great stress is laid, by both Mr. Syme and Mr. Fergusson, upon making a good long flap. Mr. Syme goes so far as to say it should be to the full extent of the fleshy part of the gastrocnemii muscles,—a point in which Mr. Fergusson fully concurs; but as the principal flap was the anterior, Mr. Lane could depend only upon integument for covering, which would be quite proper to cover the patella, itself no mean support in the stump. Although we have no doubt this boy will do well, we will acquaint our readers with his condition at a future period. This form of amputation is so uncommon in our London hospitals, that we think it right thus early to draw attention to it, through this case.

ROYAL LONDON OPHTHALMIC HOSPITAL,
(MOORFIELDS.)

REPORT OF OPERATIONS PERFORMED AT THIS HOSPITAL FROM THE 25TH OF AUGUST TO THE 25TH OF SEPTEMBER, 1857.

(Under the care of the SURGEONS.)

The following interesting summary of the active measures adopted within a month, contains many valuable facts, which we have availed ourselves of through the kindness of Dr. Bader, curator to the hospital:—

1. *Purulent Discharge from the Lachrymal Sac.* In four cases, the treatment by the actual cautery has been employed: all were of long standing. The purulent matter escaped on pressure by the upper lachrymal punctum; the lower was found obstructed close to the sac. In one case (patient of Mr. Poland) there was the fistulous opening above the tendon of the orbicularis. The changes in the shape of the surrounding bones, the deposit of the pus on the enlarged, folded sac, the membranous bridges stretching across it, were the same as in most former cases.

In one case the bone was diseased, which made the application of the white-hot iron necessary. The number of cases treated in this manner is too small to express an opinion about it. For a minute account of the operation, and a considerable number of cases, see Desmarres on the Eye, pp. 393–414, vol. i., second edition. On future occasions we shall confine ourselves to mentioning the number, duration, and result of the cases treated after Desmarres' method, unless something occurs which deviates from his experience or manner of operating.

2. *Operations on the Eyelids.*—One case of ptosis of the upper lid improved by removal of an oval piece of skin, as the advantage of this method is the not restoring of the fold between the orbital edge and the globe. In a second case of partial congenital ptosis of the upper lid, a skin incision was made parallel to, and about six lines from the edge of the lid, and out of the subjacent tissue—the conjunctiva included—an oval piece was removed; the edges of this subcutaneous loss of substance were united with sutures, and plaster applied to the skin around. This modification of Mr. Bowman's operation for shortening the levator tendon from within, is expected to keep the lid drawn up, and to remedy the defects of other methods, and especially deformities.

Enlargement of the palpebral aperture, by dividing the soft parts from the outer canthus to the orbital edge, and with sutures uniting carefully the upper part of the wound. The same operation, but subcutaneously, has been tried on a second case. In both cases, with a view of obviating the spasmodic contractions of the lids, and with complete success in the first case.

Complete eversion of both upper and lower lids, with a highly-granular state of the conjunctivæ, or general enlargement of the palpebræ.—A large oval piece of conjunctiva was removed close to the palpebral edge of both lower lids. A large

triangular piece, comprising the whole thickness of the lids, its base towards the palpebral edge, was removed from the middle portion of both upper lids. There was considerable external bleeding from the well-fed granulations. Mr. Hulke united the wounds with a needle whose eye, close to the point, ends in a wooden handle. This instrument will be found very useful where the pliability of the parts renders the use of simple needles tedious.

One case of eversion of the upper lid consequent on disease of the orbital bone.—The lid has been sufficiently brought down, by a former operation, to protect the eye. To remove the slight remaining eversion, a V-shaped incision was made through the skin, including the cicatrix. By dissecting the skin-flap from its apex towards its base, it was rendered movable. The cut edges left by bringing down the triangular flap were brought together with sutures, and the everted lid regained sufficient mobility to resume its normal position.

Removal of a pendulous growth from the upper cul de sac of conjunctiva, which consisted of organized fibrine, &c., and modelled into this shape by the movements of the lid.—This growth was caused by a husk, which, on everting the lid, was found imbedded in the conjunctiva, where it had been for two months.

3. *Muscles of the Eyeball.*—Thirty-five operations for internal and one for external strabismus.

Two cases had to be operated on after the old plan, by dividing all the tissues in front of the sclerotica; these had been unsuccessfully operated on elsewhere; there were numerous adhesions and considerable inversions of both eyes.

In five cases the eye had to be kept out by a thread. One severe case of internal strabismus is still under treatment; the eye (right) had been so completely turned in these last fifty years, that no part of the cornea was perceptible. The palpebræ moved over a convex vascular red surface. On careful examination, the outer edge of the cornea could be discovered behind the caruncle; after complete division of the muscles, &c., the eye was kept out with a thread; the present result was severe internal strabismus; the whole of the cornea was visible; the patient has no perception of light.

In one case of paralysis of the external rectus, the sub-conjunctival fascia had to be extensively divided, to replace the cornea in the median line.

The external strabismus, the result of an operation for internal strabismus, was to have been remedied after Graef's method, by bringing forward the internal rectus. (See his elaborate papers in the *Archiv. für Ophthalmologie*.) After having divided the external rectus, an incision was made parallel to, and at the inner edge of, the cornea, which divided all the tissue in front of the sclerotica, following the direction of the internal rectus. The soft parts were dissected off the sclerotica, so as to make them movable on it,

instead (as Graëfe does) of searching for the muscle, separating, and loosening it, &c.

Mr. Dixon suggested at the time the bringing of the whole of the dissected portions forward. A thread was drawn through the conjunctiva at the outer edge of the cornea, and fixed to the skin of the nose, to keep the eye turned in for the next thirty-six hours; in turning it in the movable portion was advanced sufficiently to cover the inner edge of the cornea, and left to unite in this position. Three weeks later, slight internal strabismus of both eyes; under treatment.

If the eye has to be kept turned out, it is done either after Mr. Bowman's plan, as mentioned before, or in a modified way, by drawing strong silk through the conjunctiva, close to the corneal edge, enclosing a piece of conjunctiva of about three lines' breadth, both ends of the silk are with a needle carried together from the conjunctiva behind the outer canthus through the skin outwards. A small roll of plaster is laid between both silk threads, which are then tied over it. If the eye has to be kept inverted, a single thread is to be carried from the conjunctiva behind the outer canthus, outwards, and fixed to the skin of the nose; or, without being carried through the inner canthus, it may be secured in this way.

4. *Iris*.—Formation of an artificial pupil in six cases.

In all there had been a large central corneal opacity. In opening the cornea with the broad needle, the blunt hook was used. In some the iris was left in the corneal wound; in others it was snipped off; in all a large pupillary opening remained.

Artificial prolapse of the iris for the relief of what is called acute glaucoma has, in the following case, been attended with a satisfactory result by the operation introduced by Graëfe:—The man, a patient of Mr. Critchett, injured the left eye three years ago. Immediate loss of vision, and final softening and squaring of the globe, were the results. Six weeks after the injury, when the inflammation had subsided in the left eye, a black speck spontaneously appeared in the right eye, which, within three months, diffused into a general mist. Six months later an inflammation appeared, which, continuing for six weeks, ended with considerable impairment of vision. Three similar painful inflammatory attacks ensued before the patient came to the hospital. The conjunctiva was then very vascular; the cornea slightly hazy; the iris of a dull greyish-blue colour; the pupil large and immovable; the area of the pupil of a dull greyish hue, as if occupied by some disc-shaped exudation; the eyeball very hard and painful. The patient only saw the shape of large objects. Mr. Critchett, after having removed the left globe, opened the right cornea at the outer edge with a broad needle, and with the blunt hook drew out a considerable portion (one-third) of the iris, leaving it in the corneal wound. The greyish hue in the area of the pupil proved to be some kind of membranous exudation thrown out there.

As soon as the aqueous humour escaped, it folded up and moved on the inner interior aspect of the iris. Mr. Critchett considers that the inflammation in the eye is accompanied by so much exudation that its pressure is injurious, and that by drawing out the iris a kind of filter is established, which, whenever, in the course of inflammation, the quantity of fluid in the eye would be sufficient to press upon the contents of the globe, allows the injurious abundance of fluid to drain away. Ten days later, the conjunctiva was much less vascular, the cornea transparent, the iris of normal colour, and the area of the pupil black; no pain. The patient could tell the time by a small watch. Before he came to this hospital, he had been treated with calomel and opium, and there is little doubt that if no surgical means had been adopted vision would have been lost. This kind of treatment for so-called acute glaucoma being new, we have thought proper to enlarge upon the case, especially as these cases are not unfrequent, and before this time were looked upon as almost hopeless.

Detachment of adhesions of the iris in eight cases.

In all the cases the iritis had subsided. The organized exudation thrown out in the area of the pupil, and more or less at the posterior surface of the iris, causes, by bands stretching from it to the pupillary edge and to the posterior surface of the iris, the irregularity of the pupil. The pupil, under the continued action of light, contracts as much as the bands will allow; and it is not improbable that they, continually opposing the iris, contractions take some share in the relapses of iritis. The posterior surface of the exudation is glued to the lens capsule. The extent of this, the number, elasticity, strength, &c., of the adhesions, depend on the nature of the exudation itself. The operative treatment has shown the facility with which, in many cases, these pupillary adhesions may be detached from the exudation thrown out on the capsule, and also the exudation from the capsule itself. Mr. Streatfield, we believe, first performed this operation at the hospital. He made a small corneal incision with the broad needle, and with canula scissors divided, or with the blunt hook detached, the adhesions, or with the cataract spatula lifted them away from the capsule by bringing the instrument between both, and gliding it up and down; and then divided the membrane or band. In cases where the whole of the pupillary edge was adherent, Mr. Streatfield introduced a cataract needle at the pupillary edge, through the adhesion, and then used the blunt hook for detachment of the remainder. No case was followed by an unfavourable result. In one case, the patient, who could only distinguish dark from light objects, read the smallest print after the operation; a second case was much improved. The detachment of these adhesions, considering the transparency and elasticity of the capsule, might, in many cases, serve as a preparatory step for an artificial pupil, extraction, &c. In none of Mr. Streatfield's cases had the lens capsule been injured.

5. *Crystalline Lens*.—Extraction of cataract, six cases. In one case the iris had been wounded, and, forcibly contracting, hindered the easy escape of the lens; some vitreous humour was lost. Three cases of congenital cataract (children); opening of the capsule with one needle, and breaking up of the lens. The same operation was performed on two cataractous lenses of elderly people, ages fifty-three and forty-two. In a case of traumatic cataract, a central piece was taken out of the lens with the canula forceps by entering the eye through the sclerotic close to the corneal edge.

6. *Excision of the Eye*.—Six cases of false membrane, after extraction, operated with one or two needles.

CASE 1.—G. R.—aged thirty-two; left eye; loss of vision by purulent ophthalmia; the cornea uneven, ulcerating, at several places perforated; the conjunctiva highly granular; the globe soft; severe pain in the eye. The patient has been suffering for one year and a half.

CASE 2.—L. H.—aged seventy-eight; left eye; general ophthalmia, with perforation of the cornea; total prolapse of the iris; severe pain; inability to use the good right eye.

In both cases most of the contents of the globe escaped through the cornea during operation.

CASE 3.—W. W.—aged thirty-four; left eye; immediate loss of vision by an injury three years ago. Six weeks after this a black speck appeared before the right eye, which within three months diffused itself in a general mist. Six months later the eye spontaneously inflamed; the inflammation continued for six weeks. The eye recovered vision partially. Since then three other attacks of inflammation had occurred in this eye, all accompanied with pain, reducing vision to mere perception of light.

CASE 4.—X.—aged forty; left eye. [See iris case of Mr. Critchett.] Loss of vision by an injury; globe soft.

CASE 5.—A.—aged twenty-one; right eye; loss of vision eleven years ago by an arrow wounding the eye; globe soft.

CASE 6.—M. P.—aged fifty-one; spontaneous loss of vision in the right eye nine years ago; four years ago the eye inflamed without any apparent cause; the inflammation, with severe pain in the eye and over the corresponding side of the head, containing more or less. The left eye followed the same course in a less degree; the patient recognises with it large objects. The eye, since the removal of the right one, is much easier, not painful, and with better perception of objects.

Total of major operations	...	...	...	80
Ditto minor ditto	...	...	...	104

CLINICAL RECORDS.

MR. SKEY'S METHOD OF TREATING THE CICATRICES FROM BURNS.

On the 18th of July we had an opportunity of seeing the plan adopted by Mr. Skey, at St. Bartholomew's Hospital, for removing the contraction

of tissues consequent upon a burn. The patient was a little girl, (Emma B.—, aged six years,) the front of whose neck had been burnt some years before, and had so contracted as to produce a number of distinct bands, running from above downwards, without very great deformity. The contraction resulting from the burn was treated, whilst the girl was under the influence of chloroform, by making a number of short transverse incisions in various parts of the cicatrized tissues, which gaped as they were made. This plan Mr. Skey has found very efficacious in some eight cases, all of which have done very well. It has certainly the advantage over dissecting up portions of cicatrized skin, in that there is no danger nor risk of sloughing—an accident which not unfrequently makes a case worse than if nothing whatever had been attempted.

On a subsequent visit, we found these transverse wounds healing well, without any appearance of contraction of the cicatrix. She lay upon a flat bed, with her head considerably lower than the shoulders, and the wounds are dressed with narrow pieces of strapping, so as to approximate the ends of a cut to each other—not the sides—and lengthen out the old cicatrix as much as possible. This plan seems to be a most rational one, and we should like to see it more extensively adopted.

CYSTIC TUMOUR SUPERVENING ON REMOVAL OF A SCIRRHOUS MAMMA.

THE appearance of a cyst here was merely an accidental, and not a specific, circumstance, as Mr. Birkett clearly explained. The patient was an elderly woman, whose right breast had been completely removed in November or December last, for genuine scirrhus, which had been very rapid in its growth, and had ulcerated a couple of weeks before its removal by Mr. Cock. Some months later a tumour formed, apparently external to the skin, with a thin membrane over it, and seemed to be a cyst. Its growth continued till it had attained the size of an orange, when it was excised by Mr. Cock on the 14th of July. Its contents were a serous fluid, and near its base several little fungous projections were seen, unmistakably cancerous, from the vascular surface of some one of which sprang this cyst, which, when once it had formed a secreting membrane, slowly enlarged. Its formation therefore was not specific, but accidental, and was developed from without the breast. There are two forms of these cysts: the one just described, developed from without; the other, developed from within—that is, forming at the back of the breast, which, by the gradual enlargement of the cyst, becomes spread out or expanded over it. This form is sometimes very difficult to diagnose. We have sometimes seen a breast removed for cancer when a cyst only was present at the back of the breast. The appearance also of the tumour in Mr. Cock's case was peculiar, being of a crimson and purple colour, with a thin covering, and a transparent look, as if it contained fluid.

It is now upwards of a year ago since we saw the counterpart of this case at the London Hospital, in which Mr. Adams removed a precisely similar growth from the left breast of a woman. The base of attachment was, however, small, and a section showed it to be composed of hypertrophied gland tissue, as Mr. Curling said, developed in a distinct cyst.

LIGATURE OF VARICOSE VEINS IN A PREGNANT WOMAN.

It is not a usual circumstance, as every accoucheur is aware, to perform any operation, even the slightest, on a pregnant woman; but, in the present instance, it was really necessary, as the patient, in University College Hospital, some months advanced in pregnancy, had varicose veins of the right leg, and a large varicose vein, which was almost constantly bleeding, so much as really to prove a source of great danger to life. It became a matter of some moment, therefore, to arrest this bleeding; and it was accomplished by Mr. Erichsen in the usual manner he is in the habit of employing of ligaturing veins—namely, placing pins under the veins, and tying them over a piece of gum-elastic bougie. We learnt that this procedure was quite effectual, without any bad consequence to the poor woman.

CONGENITAL DEFORMITY OF THE LIP IN AN INFANT.

A RATHER unusual deformity was seen in a child, five weeks old, at the Royal Free Hospital, on the 6th of July; it consisted of a prolongation of the lip into the left cheek, evidently depending upon some disease in utero—possibly syphilitic, as the child had a suspicious rash about the body. The margins of this fissure in the cheek had no fibres of the orbicularis oris muscle in connexion with it, there being merely a separation of the fibres at the angle which thus permitted the large fissure to exist. Chloroform was administered at this date, when Mr. Wakley pared the edges of the fissure to the proper angle of the mouth, and brought them together by pins, with the best results. We have frequently had occasion to speak of early operations in children; we heard Mr. Wakley say he had remedied a double hare-lip in an infant twelve hours old, the mother not having seen the deformity. We know that Mr. Fergusson has operated as early as three days. On the 4th of July, we saw him perform the operation for hare-lip, on an infant eight days old.

A FALL ON AN IRON SPIKE.

Of the horrible accidents which occasionally occur, impalement is truly the worst, and if arising from a fall of many feet, the earthly career of the unfortunate patient is soon brought to a close. There is a lad, fifteen years old, in University College Hospital just now, under Mr. Erichsen's care, who fell from a height of not more than nine

or ten feet, on to some iron railings, and the spike of one entered his left thigh from behind. This occurred on the 14th of July. The wound was not very deep, but was exceedingly painful, and was being treated by poultices. The boy seemed to have sustained some amount of shock, too; but we anticipate a recovery after a little while. The wound is a punctured one, but the spike was not very sharp-pointed, else it might have completely penetrated the thigh; the effect, therefore, has been that of a sore bruise as well as a wound.

PURULENT ABSORPTION DESTROYING THE RIGHT LEG

AN elderly man, of unhealthy aspect, entered St. Mary's Hospital with an ulcer of his left leg, which was submitted to treatment. A few days after his admission he was seized with difficulty of breathing, pain in the chest, and all the general symptoms of the formation of purulent deposits in the system. Shortly afterwards the whole of the right leg and thigh began to swell, and no doubt existed but that an extensive formation of matter had formed in the knee-joint. In the meantime all the chest symptoms got better. The matter was let out, and large quantities of it continued to come away from day to day. Mr. Coulson observed that he never saw a clearer case of blood-poisoning; but instead of becoming localized in any internal organ, it accumulated in the knee-joint. He amputated the leg above the knee some inches by the flap operation on the 15th of July, and on opening the knee-joint it was full of pus, without any great disease of the cartilages. The tissues were much infiltrated about the thigh, and the muscles were of a yellowish-brown unhealthy colour, as if in a state of fatty degeneration. Mr. Coulson allowed the flaps to be exposed to the air for some eight or ten hours, they then became glazed over with lymph, and adhered the moment they were brought together. Our readers are aware that this practice has long been employed by Langenbeck and others to prevent oozing from the stump with good results. This surgeon allows them to remain exposed for twenty-four hours at a time. We saw the flaps some little time after the patient was removed to the ward, and not a drop of blood was oozing from them. It will be observed that the purulent deposition in this case took place in the knee of the leg which was *not* ulcerated.

PROLAPSUS ANI AND HÆMORRHOIDS.

THE patient was an elderly man, long subject to hæmorrhoids, which had produced partial prolapsus ani, and, on a few occasions, of the rectum; he was admitted into the Royal Free Hospital on the 6th July. Mr. Wakley passed a curved tenaculum through several of the piles, applied strong ligatures, and cut them off with curved scissors. As this was done in five or six places, it will have the effect of not only getting rid of the piles, but at the same time of curing the prolapsus during the process of cicatrization. In the previous

volume, is mentioned a case of prolapsus of the rectum, under Mr. Fergusson's care, at King's College, which was perfectly cured by the plan, which we there described, of cutting away little portions of skin from the margins of the anus.

CONDYLOMATA OR MUCOUS TUBERCLES COMPLETELY REMOVED FROM THE VULVA.

THESE mucous tubercles were so extensive and so prominent, that they formed a series of flattened tumours completely surrounding the vulvæ and anus of a young woman in the London Hospital, who had never had syphilis; some of them even extended into the vagina. There was no hair on the pubes, nor had there ever been, so far as could be ascertained. The outlet of the vagina was concealed by the pressure of the condyloimatus masses towards one another in the median line. All these were completely cut off, when the girl was under the influence of chloroform, by Mr. Curling, with a pair of curved scissors, an operation which required patience, but one which proved most satisfactory, for when they were all removed, the outline of the parts was intact and quite natural, thus helping to prove the truth of the doctrine maintained by some pathologists, that these growths are solely confined to the epithelial layer of the skin, an opinion in which Mr. Curling himself fully coincides. He stated at the time he did not consider these growths to arise from any specific disease, although they do sometimes, but generally from the irritation produced by the want of cleanliness on the part of the patient. That was apparently so here. They are met with, however, in specific diseases, as well as without. Their structure, if examined, is entirely epithelial, and when removed, a complete cure is effected by the use of some mild astringent application. There was much bleeding while cutting them off, but it very soon subsided, and no vessels required tying, as the hæmorrhage arose from the capillaries which abound in such vascular growths. A firm T-bandage was lastly applied. The growths removed filled a small porringer, and occupied a space as large as two flattened fists before removal; some of the smaller ones were sessile.

TWELVE TOES; REMOVAL OF TWO.

THIS was of course a congenital deformity—not an arrest, but an increase, of development, in that there existed six toes on each foot of a little boy in St. Mary's Hospital. The supernumerary toes were growing parallel to the sides of the little toes, and had not complete regular joints, being somewhat rudimentary. They were removed by Mr. Ure, on the 16th of July, under the influence of chloroform, as they were proving an inconvenience.

Every one is familiar with the freaks of nature in the instances of extra fingers and toes; sometimes the number may be normal, but their growth is irregular; some really wonderful specimens of

the kind are to be seen in the museum of the London Hospital.

TREATMENT OF TIC DOULOUREUX BY DIVISION OF THE NERVE.

WHEN all other means have failed to cure that agonizing affection, tic douloureux, the next thing which comes under consideration is the division of the nerve, or the removal of a portion of it. We have seen both of these practised many times. The latter is, perhaps, a preferable proceeding, because, in simple division, the ends of the nerve are sure to reunite, with subsequent return of the old pain and extension of the influence along its course, like a connected electric wire. This connexion is certainly destroyed when a piece of the nerve is removed. On the 22nd of August, Mr. Fergusson divided the sub-maxillary branch of the fifth nerve, as it passes through the mental foramen, of an old man who had been for years subject to this painful disease, which—the old story—has resisted everything that usually afforded relief. Under the influence of chloroform this was easily effected. It may produce a cure, as it sometimes does: it will, no doubt, for a time afford relief. At the same time Mr. Fergusson showed another man, an old patient of King's College Hospital, in whom the nerve had been twice divided, with relief for a time, the pain returning. On the third occasion he removed a piece of the nerve by means of a gouge applied just over the bone; this was more effectual for a longer time, but still the poor man, who is otherwise stout and able-bodied, is a great sufferer. The anxious expression of countenance, with the worn-out aspect, is really distressing to witness in these cases. We are not aware whether it has ever been tried in tic douloureux, but we should like to see the nerve destroyed by the delicate wires of the electric cautery, which is being used with so much advantage at the present time in a variety of affections.

RECURRENT EPITHELIOMA OF THE LIP.

A SHORT time back we witnessed the operation of removal from the lower lip of a cancerous growth, by Mr. De Méric, at the Royal Free Hospital, and which has evinced a disposition to recur. The particulars of the case, as furnished us by Mr. W. Curran, house-surgeon to the hospital, are, that the patient was a labourer, thirty-one years of age, a large, muscular, healthy man, of temperate habits, and free from any hereditary taint. When admitted, there was a hard, irregular swelling, of considerable size, on the outer margin of the lower lip, of four months' growth, first noticed as a chapping, and then assuming the appearance of a blister, being regarded as due to the irritation of a pipe, to which Mr. Curran's notes mention, the patient "clings with a tenacity worthy of a better cause." Two weeks before admission he had severe darting pain, particularly at night, with aching along the face and jaws. The disease was entirely removed by a V incision,

the edges being brought together by needles. The wound healed up, but left a rugged cicatrix, at the bottom of which a fistulous tract remained, which admitted of the occasional escape of saliva. When we last saw this man there was an indurated fissure, with return of pain, relieved by smoking or friction. The surrounding skin was hard and nodulated, and adherent to the subjacent bone, which is itself likely to become involved in the disease. Notwithstanding all this, the man's general health is good.

Shortly before the operation in this case, we saw Mr. Cock, at Guy's, remove a large cancerous ulcerated tubercle from the under-lip of a man by V incision; it had its origin in a pipe. The wound healed up perfectly.

This disease is most probably at first local, and free and early extirpation is the remedy. Sometimes the cure is perfect, at other times a relapse occurs in from six months to two years.

THE INFLUENCE OF HEAT ON DISEASE.

The influence of heat in producing an aggravation in the symptoms of many diseases is a fact well known to everybody.—Lately during the very hot weather, we observed that many patients, the subjects of exhausting diseases, whether internal or external, medical or surgical, had their sufferings greatly increased. Perhaps in no class of patients was this more marked than in cancerous affections, amongst the female sex especially. This forcibly struck us at the Cancer Hospital, as well as elsewhere, for nearly all the patients complained of an increase of pain, even when the cancer was not ulcerated; and when so, the discharge was greater, as well as the pain perhaps still more severe.

On the 25th of August, of several cases of cancer of the tongue which we saw, most of them hitherto doing pretty well, the greater number had slightly relapsed. One poor woman, whose case was referred to on a former occasion, who was admitted almost moribund, with sub-maxillary enlargements, conjoined with a deep ulcer at the side of the tongue, and great emaciation and debility, has completely recovered under treatment. All the lumps had become absorbed, the cancer had improved, as well as her general health in every way, yet a few hot days threw her back.

The prolonged influence of heat, such as we have had it lately, produces a certain amount of depression and languor in the healthy, but in the weak and oppressed by disease, particularly cancer, it is followed by debility and exhaustion, and hence an increased activity to nervous irritability and its consequent pain.

We have observed also that operative proceedings were to some extent inadmissible, as many cases, and some of them trivial, took on a sort of low fever, which ran into pyæmia and death.

URETHRO-RECTAL FISTULA.

An abscess formed in the perinæum, about four weeks ago, between the rectum and urethra of a

young man aged twenty-two years, in University College Hospital, which produced retention of urine from pressure on the urethra alone. This undermined the mucous membrane of both canals, and burst into the rectum, and was subsequently followed by the formation of a urethro-rectal fistula. The patient's general health was very bad indeed. He is an assistant tutor by occupation, and his whole system below par. He had the remains of an abscess (not a bubo) in the right groin, one or two about his body, one in his left hand, and two or three about the fingers of his right hand, and his general aspect showed an absence of vital energy. On the 12th of August, all the perineal passages were laid into one by Mr. Erichsen, and attention was paid to his general health. This treatment, when last we saw him, was answering well; some urine still passed by the perineal wound, which may be expected for a little while; the irritability was certainly less; and the absence of spasm was marked since the division of the sphincter ani at the time of laying all the passages into one. A good-sized catheter could be passed into the bladder, on overcoming some spasmodic closing of the membranous portion of the urethra. We have no doubt this case will do well.

HERNIAL-LIKE SWELLING OF THE ROUND LIGAMENT.

MR. HENRY LEE showed us a case of some interest in King's College Hospital, on the 22nd of August, in a young married woman, which, to some extent, had the symptoms of femoral hernia. There was a distinct swelling in the situation of the round ligament of the right side, which was associated with some severe abdominal pain. It could not be reduced, gave no impulse on coughing, was somewhat soft as if omentum, and had been existing for nearly twelve months, although troublesome and painful only latterly. Mr. Lee cut down upon it, and divided a cyst filled with watery fluid; it is suppurating, and will heal up. The abdominal uneasiness has disappeared. Its presence, however, may be very well explained by the sympathetic irritation over the round ligament, extending along its course to the seat of origin, and thus producing a sort of colicky pain.

ABSORPTION OF A FACIAL SWELLING.

DOUBTFUL tumours always lead to a suspicion of malignancy and a tendency sometimes towards surgical interference. A case of this kind, in a woman aged thirty-seven years, who was otherwise healthy, is in St. Bartholomew's Hospital, under Mr. Coote's care. Five months ago she had paralysis of the retina of the right eye for an hour or so, which came on without any cause. This was followed by a lump near the inner angle of the eye, but below it, the size of a pea, which spread downwards, increasing in bulk until a tumour had formed over the inner aspect of the

malar bone, the size of a small potato, and somewhat flattened, a part of it being distinctly felt from the mouth. Its rapid growth, situation, hard feel, and apparent freedom from deep attachment, as it was slightly movable, would have influenced some surgeons to propose removal; but Mr. Coote treated the patient constitutionally, giving her glycerine, quinine, and iron, three times a day; and although she has been but two weeks in the hospital, the swelling has fully diminished one-half in size, and no doubt will be completely absorbed. We fully believe that many suspicious or doubtful swellings, similar to the present, might be removed by absorption; in fact, constitutional measures do not receive that attention at the hands of surgeons which they deserve.

On seeing this woman at a later date (July 18th), there was but little of the tumour remaining; it had become, moreover, divided into two portions.

RE-EXCISION OF THE ELBOW OF A BOY.

WE now and then meet with cases which had been submitted to every variety of treatment, both medical and surgical, which do not turn out well, owing to some inherent resisting vice of constitution. This, perhaps, is somewhat evident where the strumous diathesis is strongly marked, as was the case in a little boy, about seven or eight years old, whose left elbow-joint had been partially excised by an eminent surgeon at another hospital, some months ago, which at the time was followed by middling results. The history of this boy was that he had been a patient at two or three of the London hospitals for this elbow, for which he was finally sent to the sea-side with some benefit. On his return to London, it became bad again, when he entered a hospital in London, and it was partly excised. It went on well for a little while, but never completely healed; and his health participating in the diseased action still going on in the ends of the bones, he was admitted into University College Hospital, and had, we may say, a re-excision of his joint performed by Mr. Erichsen, on the 19th instant. There was a great raw surface, with large openings through which the fingers passed to carious bone, and the discharge was exhausting the little fellow. Every particle of affected bone was carefully removed, and the elbow put on an angular splint. At the same time, tonics and good diet were ordered; and although the boy may do well after a while, he will have a shortened arm, but with perhaps a useful hand at any rate. We will refer to this case on a future occasion.

A PAIR OF ARTIFICIAL FEET.

OUR readers will remember the description which we briefly gave of a case of spontaneous gangrene of both feet, with separation at the epiphysis, and a sort of natural, Syme's amputation, at the ankle-joint, in the preceding volume of this journal. This occurred about ten years ago, and the

stumps remained so sore and painful that the patient, a girl, could not bear artificial feet. On the 20th of last March, Mr. McWhinnie, at St. Bartholomew's Hospital, amputated the stump of the left leg, a little higher up, and which healed in a satisfactory manner. Some weeks later, he repeated the operation on the right leg, with equally good results. We examined them both two or three weeks back, when we found the girl in excellent health, and the stumps in a condition to receive the artificial feet which were being made for them. Her present age is nineteen years; the spontaneous gangrene occurred when a child of nine years, and arose from debility and exposure to cold. There is a good, firm cushion at the end of each stump, which will bear the weight of the body well. Progression with artificial feet will be accomplished with the aid of a stick. The patient was only waiting for the artificial feet to return to the country.

EXCERPTA MINORA.

Glycerine in Corns.—These troublesome things Mr. Wakley is in the habit of treating, at the Royal Free Hospital, by the application of glycerine, which has the effect of softening them, when they are easily scooped out. We saw as many as seventeen corns entirely removed in twelve days in this manner.

Foul Ulcers of the Legs.—A woman, at St. Mary's Hospital, whose entire left leg had been in a state of ulceration for years, with islands of skin here and there, has had it effectually healed up, by Mr. Coulson, by wrapping a piece of linen around it wet with a lotion of the sulphite of soda, and a bandage over all. Mr. Coulson thinks the bandaging and rest have proved as serviceable as anything else used.

Duration of Cancer.—A case of some interest presented itself at the Cancer Hospital, on the 25th of August, in the person of a female, aged seventy-four years, the subject of cancer of the left breast for twelve years. She had been a patient at this hospital since its foundation, with the exception of the last three years, during which time she had been in good health. She came to show an ulcerated tuberculous mass in the same breast, the size of a small pear, otherwise the disease had dried up and disappeared. She still looked a hale and hearty old woman.

Scirrhus Ulceration of the Womb.—Mr. Moulton has found the following plan of treatment for cancers of the womb very effectual amongst the patients of the Westbourne Dispensary, Paddington—namely, an ointment made of equal parts of powdered sulphate of zinc and yellow basilicon, spread on lint and applied directly to the affected part; and the use of a lotion of half an ounce of Burnett's disinfecting fluid to a pint of water.

MULBERRY CALCULUS PROJECTING FROM THE FEMALE URETHRA.

ELLEN C—, aged eighteen, had suffered no kind of inconvenience referable to the bladder or

urethra until the morning of July 4th, when, having passed urine as usual over night, she now found herself unable to do so. She could feel a hard substance within the urinary passage. This substance protruded somewhat during the day. On coming to the Royal Free Hospital about four o'clock P.M. she was suffering great pain from retention of urine. On examination, Mr. Gant found a calculus visible at the meatus urinarius, and this he gradually extracted with the forceps. The stone was the size of a bean, and, from its furrowed and water-worn appearance on one surface, had apparently been impacted for some time during its passage through the urethra. When tested, the calculus was found to be oxalate of lime. The patient had never observed any trace of blood in her urine; and this circumstance, and the total absence of other symptoms, concur to prove that a stone may exist in the bladder without yielding any evidence of its presence. This insufficiency of symptoms alone, refers us to the comparative value of sounding as the means of determining diagnosis. It is known that smaller calculi have been detected by the sound than those which have passed through even the male urethra; and we may therefore presume that if a calculus be too large to escape thus, it may be discovered by sounding. If too small to be thus detected, it will most probably pass away with the urine.

PROLAPSUS OF THE UTERUS AND BLADDER.

On Saturday, the 22nd instant, a poor woman, whose uterus, bladder, and vagina were prolapsed between the legs, and hung down the size of a large cocoa-nut, was submitted to operative measures by Mr. Fergusson, at King's College Hospital. She had been a great sufferer for years, without getting any relief, the last three especially. He diminished the size of the external outlet by taking up a pinch of mucous membrane on the left side with a pair of forceps, dissecting it downwards with a scalpel to the fourchette, and up again on the right side, as we have seen him do several times. Interrupted sutures were applied, to bring the denuded surfaces together, by means of a common curved needle and thread, instead of the quill sutures applied with a needle fixed into a handle.

On the 4th of July, Mr. Fergusson also operated in a similar manner upon an unmarried female with procidentia. He observed on that occasion, in relation to that particular case, that her condition was somewhat unusual as occurring in an unmarried woman. In most respects, the operation, he said, was analogous to several which had been performed in the hospital. The womb in this case, however, lay very low down, and the mucous membrane of the vagina was more than usually abundant. This is the fifth case of the kind we have had lately, he observed, and all the previous ones have made good recoveries. "You will observe that in this instance I have confined myself to the common interrupted suture, instead of the quill. I believe that this suture is

quite as efficacious as the quill suture. In the last operation, you will remember I employed two quill sutures and one interrupted, and as everything turned out favourably, I have this time used all stitches. In course of time, the parts lose their tense condition, the perineum becoming modified by the stretching it undergoes. However, my friend Mr. Baker Brown, of St. Mary's, has suggested that I am in the habit of closing the parts too extensively, and that it is advantageous for certain purposes to which these parts are applied by women not too far advanced in life that this should be kept in view. The previous cases will of course remain as they are, but acting upon the hint, I have accordingly, in this operation, borne the suggestion in mind."

The operation of this day week has made the eighth done by Mr. Fergusson within a few months, and the seven previous have turned out well. It is one now becoming of a very common character.

NEURALGIA THE EFFECT OF A BADLY-UNITED FRACTURE.

A CASE of some interest was brought into the theatre of Guy's Hospital on the 18th inst., which could not be treated in any other way than surgically. A healthy, stout lad, a sailor by occupation, about four months ago, while at sea, fractured his right humerus about its middle. The fracture was set in some Spanish port where the vessel happened to be, but so badly as to produce union with much deformity, and the projection of the broken and sharp ends of the bone anteriorly, which so pressed upon the radial nerve as to cause very severe pain along its entire course down to the hand. This had resisted every kind of treatment; and as the union of the fracture was now very firm and solid, Mr. Cock thought he would cut down to the bony projection, and remove as much as he could with a pair of strong forceps. This was done under chloroform, and two pieces of bone cut off. As anticipated, the pain entirely disappeared, and the lad will no doubt make a good recovery, but still with a very imperfect arm.

TWO CASES OF CANCER OF THE LIP.

ONE of these was an old man aged seventy-three, who had been an inmate of the Cancer Hospital with a large cauliflower growth, involving nearly the whole of the lower lip, of six years' duration. Four years ago it was removed by a surgeon in Berkshire, and reappeared two years after. The upper part of the lip is ulcerated, but healthy-looking, and the surrounding parts look red and inflamed. Latterly his health has been failing, but this appeared to us, when we saw him, (July 7th,) to be due more to old age than the disease. The powdered sulphate of iron was sprinkled over the ulcerated surface by Mr. Cooke, with good results so far. Dr. Knox pointed out to us in this man the remarkable development of the risorius Santorini, which, as our readers are

aware, is the insertion of the platysma myoides muscle into the angles of the mouth.

A second case of cancer of the lip, at the same hospital, in a man aged fifty, had existed for four years. The ulceration was extensive, involving the whole of the lower half of the orbicularis oris muscle, and commenced in the form of a pimple. A lotion of the sulphate of copper was here being used. Dupuytren's caustic, which recently cured a case of cancer of the lip in this hospital, had been ineffectual in this man. It is composed of ninety-five grains of calomel and five of arsenic.

RESECTION OF THE ELBOW.

We again saw this operation performed on the 28th of July, at Guy's Hospital, by Mr. Cooper Foster, on a little boy, whose right elbow was a typical example of scrofulous disease, from the form of the swelling, the number of fistulous openings, and even some sinuses which were present. Chloroform being given, the lad was turned over on his face, and, by means of an H incision, the diseased joint removed with cutting forceps. There was a good deal of oozing at first, but it soon subsided. The disease had been existing for some months, and the arm really looked so bad that amputation might have been entertained; but the ulcerated state of the skin which was present was solely due to the effects of counter-irritants. He has gone on well since the operation. We would remark, that this was a very suitable case for the single long incision, as it would have traversed healthy skin, whereas the two incisions forming the H went through the inflamed parts.

MEDICAL SOCIETY OF LONDON.

SATURDAY, OCTOBER 10TH.

MR. HIRD, PRESIDENT, IN THE CHAIR.

THIS was the first meeting of the session, and was a crowded one.

Dr. GARROD brought under the notice of the Society a method he had recently discovered of

CLINICALLY DETERMINING THE AMOUNT OF SUGAR IN DIABETIC URINE,

exhibiting at the same time a small instrument, named a *Glucometer*.* It is constructed upon the fact, that glucose or diabetic sugar, when boiled with a solution of carbonate of potash, gives rise to an amber colour, and that the tint is in proportion to the quantity of sugar. The apparatus consists of a standard, a graduated tube of the same calibre as the standard, and an accurately divided minim measure, the standard being filled with a solution of the exact tint produced by a known quantity (half a grain) of the diabetic sugar to the fluid ounce. The following is the method of using the glucometer:—A small quantity of the urine, say half a fluid drachm, either

previously diluted or not, according to circumstances readily ascertained, is to be accurately measured in the small minim tube, and mixed with the same bulk of a solution of carbonate of potash of a given strength, and after the measure has been washed out with a drachm or two of distilled water, the whole is to be kept at the boiling point over a spirit-lamp for five minutes, either in a large test-tube, or, still better, a very small flask. After cooling, the coloured liquor should be transferred to the large tube, and distilled water added until the tint exactly corresponds to that of the standard—a process which may be readily effected by holding the tubes side by side, directing them to a moderately bright light. All the required data for determining the amount of sugar are now obtained. Suppose, for example, that the half drachm of urine employed in the quantitative analysis requires to be diluted so as to occupy six and a half drachms before the standard tint is obtained, such urine would contain six grains and a half of sugar per ounce; for its bulk has been increased thirteen times, and therefore thirteen half grains, or six grains and a half, of sugar must be present. Again, suppose the urine had been diluted with three times its bulk of water, before being employed in the glucometer, which when the urine is rich in sugar may be necessary, in order to prevent the graduated tube being of inconvenient length, then it is only required to multiply the amount of sugar by four to obtain the total quantity in the original urine. In the above-named experiment it would therefore be twenty-six grains in each fluid ounce. Dr. Garrod alluded to various methods which had from time to time been employed for the purpose of ascertaining the amount of sugar in the urine in cases of diabetes; showed the difficulties which most or all of them presented, especially to the medical practitioner, which was practically proved by their non-employment, and expressed a hope that by means of the glucometer the clinical determination of sugar might become a matter of little difficulty, and capable of being effected by any one engaged in the practice of medicine; and he also considered that such determinations might prove of great value, not only in ascertaining the amount of disease under which any diabetic subject might be suffering, but also the value of various articles of diet and of different remedies in the treatment of this most important disease.

STARCH FROM THE ANIMAL KINGDOM.

Dr. PAVY exhibited some of the newly-discovered amylaceous material which is obtainable from the healthy liver, and which forms the source of the animal sugar. In referring to the history of the saccharine secretive function of the liver, Dr. Pavy stated that, upon the announcement of the discovery by Bernard in 1848 that sugar was formed in the animal body, it was referred to a transformative action of the liver on an albuminous constituent of the portal blood. The celebrated experiment of puncturing the floor of the

* The instrument is manufactured by J. Coxeter, Grafton-street East.

fourth ventricle, and establishing diabetes, rather supported this view; for it was thought that the irritation of the nervous centre stimulated the secretory action of the liver, and led to the production of a superabundance of sugar, which, accumulating in the circulatory system, was pumped off by the kidneys, and thus appeared in the urine. The next step of information removed the direct influence of the nervous system, and showed that the production of sugar could not be regarded as analogous to the process of secretion. In September, 1855, in fact, Bernard announced, at the Académie des Sciences, that the formation of sugar continued for as many as twenty-four hours after death in a liver from which the blood had been entirely removed. If, for instance, the liver of a healthy animal be removed immediately after death, and a current of water be injected from the portal vein through its vessels, the whole of the blood is washed out, and the organ is also quickly deprived of the saccharine material it contained. Now, if such a liver be placed on one side and examined in a few hours' time, it will be found to have become strongly impregnated with sugar, the production of this material having continued in the exsanguine tissue of the gland. Upon this fact our knowledge had rested until within the last few months. During the early part of the summer, Dr. Pavy had noticed, whilst conducting his experiments on the *destruction* of sugar, (which have led him to new and unexpected results, which he will shortly communicate to the profession,) that he could isolate a material from the liver which subsequently underwent transformation into sugar; and he had recorded in his laboratory-book the influence of chemical agents, such as acids, alkalies, and alcohol, on this material. He had since learnt, however, on his recent visit to Paris, that Bernard had most satisfactorily made out the nature and relations of this body, which from the analogy presented in its chemical bearings to starch, he had called an animal amylaceous or starchy material. It has also been called glucogenic material, and this was probably the best term to apply to it at present, because it implied nothing more than we knew the substance in reality to be. The specimen of this glucogenic material which Dr. Pavy exhibited had been procured from the liver of a dog in the following manner:—The dog had for some days been submitted to a strictly animal diet, so as to preclude the introduction of any starchy material into its system from the vegetable kingdom. After killing the animal, by the destruction of the medulla oblongata, the liver was removed, and a tube firmly ligatured in the portal vein, for the purpose of passing a current of water through the vessels to wash out the blood, and at the same time remove the sugar. In half an hour's time the water which had passed through the vessels was colourless and destitute of sugar, as was also the tissue of the liver itself. The organ was now cut up into small slices, placed in an evaporating dish, boiled in the liquid which exuded from it, and subsequently strained and

pressed to obtain all the liquid that was procurable. The object, in fact, was to make a decoction of the liver, which holds in solution the glucogenic material, and has, thereby, communicated to it an opalescent or a milky appearance. This was then mixed with alcohol (in the proportion of one part of the decoction to about five of the spirit), and immediately a precipitate was produced, which was collected on a filter and dried, and formed the specimen then before the fellows of the Society. The substance before him was of a grayish colour, which resulted from contamination with albuminous matter. It might be made perfectly white by prolonged boiling in a solution of potash, which did not at all affect its properties. It was insoluble in alcohol and strong acetic acid. Its solution in water presented the same milky appearance as the fresh decoction of liver. It gave no reaction with the sugar tests, nor was it susceptible of undergoing fermentation. It was, however, readily convertible into dextrine and sugar by the same agents which produced this change in the starch of the vegetable kingdom. Indeed, boiling with acids and contact with diastase, saliva, pancreatic juice, blood, or any animal matter in a state of change, very readily effected its transformation into glucose, when it gave all the characteristic reactions of this substance. Dr. Pavy further stated, that by means of chemical agents and the microscope the natural seat of this material could be shown to be in the interior of the hepatic cells.

Mr. HIRD read a paper on

THE PRESENT STATE OF SURGICAL SCIENCE IN REFERENCE TO CANCER AND ITS TREATMENT.

It was not his intention, the author observed, to enter into a detailed report of individual cases treated by the escharotic applications which have been revived by many members of the profession besides himself, but to inquire whether recent experience has shown that we can control the progress of this destructive disease with more certainty, and on sounder surgical principles, than our predecessors were enabled to do. The questions whether carcinoma ever originates and continues as a local disease; whether it ever spontaneously disappears without the interference of art; whether a tumour, originally innocent in its character, is susceptible of cancerous transformation; whether it possesses anatomical, chemical, physiological, and pathological characters, by which we can infallibly distinguish it from other growths, which we are unable to do by the senses of sight and touch; whether, even supposing the constitution to be affected, the ablation of the local disease may not arrest or retard its fatal course; whether removal ever accelerates it by bringing into activity a force which previously had lain dormant in the system; whether we possess remedial agents, by which we can retard or resolve the disease, he considers, embrace subjects of vital consequence, on the solution of which the life of the patient, the truths of science, and the reputation of the surgeon depend. In his observations on the forms of cancer, the author included

the epithelial variety along with the encephaloid, scirrhous, and colloid, and objected to its removal from the cancerous group, although it has less tendency to contaminate the lymphatic glands and the system generally than the other three forms of cancer, and differs slightly in its histological elements. After briefly reviewing the important subjects embraced in the origin and development of cancer, in which the preceding questions were answered so far as the present state of science would admit, he proceeded to discuss the treatment. In this section the author dwelt on the means of arresting cancerous growths by medicinal agents, and contrasted the comparative advantages of removing the local disease by caustics and the knife. In reference to medicines, the author believed that if any remedy possessed a power of retarding the progress of the disease, it was arsenic, which he administered with cod-liver oil, and has not found the latter objectionable, on the ground of animal oils tending to encourage the fatty matters in the system, on which cancerous formations are supposed to feed. Arsenic as a preventive of secondary formations after removal of the local disease, he (Mr. Hird) had great confidence in, and in combination with iodine it was strongly recommended by the late Dr. Anthony Todd Thompson; Dr. Copland and the late Mr. Hill witnessed great advantages from its use. The great question of removal by the knife or by caustics concluded the paper. Caustics the author had found more tedious in their operation and more painful than the knife, and occasionally failed to enucleate the tumour, and he has no faith in a supposed physiological action on the constitution through the part treated, by which it has been stated, without evidence to justify the statement, and, in opposition to his own experience, the disposition to return after removal is less than when the part has been extirpated by the knife. He has seen six cases in which the disease returned after removal by caustics, and has read and heard of many more. Nevertheless, there are cases in which caustics offer greater advantages than the knife. In certain localities, and in particular conditions of the tumour, and where loss of blood, or the dread of a cutting operation, would greatly depress the patient. Early operation the author strongly advised, as affording the only hope from surgery in scirrhous, colloid, and epithelioma. In encephaloid he did not advise an operation.

A short discussion ensued, in which Dr. A. Clark and others took part.

Medical Annotations.

"No quid nimis."

THAT moribund humbug, Homœopathy, only waits the upstarting of some fresh delusion to give the *coup de grâce* to its lingering existence. Of the homœopathic hospitals established in London with such vast parade but a few years ago, not one has maintained its position. Some are shut

up altogether, whilst others have dwindled into miserable little dispensaries, sadly straitened for means to purchase even the remedies which are reputed so cheap. For cheapness is one of the arguments (and some think it the best) urged in favour of Hahnemann's system. Hand-labour is the chief expense; for, since the fifteenth dilution of a grain (quite a moderate extent of manipulation) involves a mass equal to sixty-one globes the size of the earth for a diluent, the actual expense of the remedial material could not be very great. Hence it is a marvellous mystery what can be the contents of those cases daily advertised at prices varying from two to three pounds each; accompanied by books of directions which cost from one to sixteen shillings. There is scarcely a newspaper, from *The Times* down to the last new halfpenny sheet, (published for the enlightenment of the public, and to uphold the dignity of the press,) in which such advertisements may not be found in stray corners. It is evident that somebody buys the books and boxes. And it is, moreover, unfortunately true that every purchase thus made involves the condemnation of certain harmless sufferers to swallow the little useless sugar-plums sold at these exorbitant sums under the misnomer of medicines. For the victims are usually the poor feeble-minded clergyman with homœopathic predilections, and foolish old women are chiefly the purchasers of the rubbish. They addle their weak brains with perusals of the books; written by a person described as J. Laurie, M.D., and announced to be "devoid of all technicalities." Then they undertake the treatment of the sick-poor whose ill-chance it is to fall within their reach. Now, this is a proceeding which requires some decided check. The success of homœopathic practitioners is entirely confined to nervous folks, whose only ailment is laziness; and to dyspeptic people, who suffer from over-feeding or wrong-feeding. With such persons, careful adaptation of diet and exercise will apparently work wonders. And in his knowledge of these things are comprised the only really serviceable weapons of conscientious homœopaths,—for, of these, we believe, there are a dwindling few,—whose positions and relations are like the numerals which represent their own doses; one figure of little value followed by a perfect battalion of cyphers. No medical man will be inclined to envy them the guidance of those perversely foolish virgins, who swallow their globules and small-talk; or those slaves of the stomach, who live to eat, and are only kept in health by being told what to eat. But that people without more knowledge than is to be acquired from these homœopathic books, advertised (price 16s.) for "families, emigrants, and missionaries," should be allowed to waste the time, and often thus sacrifice the lives, of the sick and helpless and ignorant by administering the contents of a homœopathic nostrum chest (price £5), is little short of sanctioned manslaughter and unjustifiable homicide.

At the command of the Emperor of France,

there has been built, near Charenton—on the outskirts of the Bois de Vincennes, and some few miles from Paris—a hospital for the reception of convalescent workmen. Founded by a decree in March, 1855, the completed building was recently inaugurated; the Minister of the Interior taking a principal part in the ceremony, and delivering the address on the occasion. This new building is arranged to accommodate five hundred invalids of the labouring classes.

Numerous and well-managed as are our London hospitals, there is abundant room for an institution similar to that originated by the French emperor. The one small convalescent hospital near London is rather an admirable working model than such an institution as should be provided for the metropolis as a half-way house to health for the poor. The wards of our hospitals are often unavailable for the reception of urgent cases, because the beds are occupied by patients who, though cured of their ailments, remain too enfeebled for labour; who, if turned adrift into the world, would eddy back to illness from sheer inability to force their way into the stream of life, and resume their bed of sickness with diminished chance of recovery. The establishment of a hospital for incurables was a noble exercise of benevolence. It was the work of that "trywe charite" which, saith Piers Plouhman, "most helpeth men to Hevene." For no further worldly service could be rendered by its inmates—withered branches on the tree of life that might never more bear fruit. On the other hand, the establishment of a convalescent institution for the poor, proportionate to the size of London, would be not only a work of charity, but one of political economy; by helping to tide the poor man over the trying time when he is recovering his strength, and enabling him to resume his lowly, but not unimportant, place in the social scale.

We have been blessed during the past summer and throughout the harvest-month, "crown'd with the sickle and the wheaten-sheaf," by a continuance of magnificent weather, scarcely paralleled in the memory of that redoubtable personage, the oldest inhabitant. On the 28th of June the temperature rose to 88° in the shade, this being the hottest day that has occurred for eleven years. During the first week in August the thermometer also marked 88° on one day; the average temperature being 3° above that of the same week during forty-three years. In the second, third, and fourth weeks, the temperature was respectively 3°, 4°, and 7° higher than the average of the same time during the above number of previous years, the greatest heat in the shade being 83°, 83° and 85°·9 on Sunday, August 23rd. Mons. Babinet, the French astronomer, has recently reported to the Institute the results of his observations on some changes in the currents of the ocean. To the favourable influence of these he attributes the hot weather of the present summer. He, moreover, stated his belief that this is only the first of a series of years of great heat,

attributable to the same causes—"quibus oceanus vincula rerum laxet," as Seneca long since prophesied. The conclusions of the French astronomer are rendered more probable by the great influence known to be exercised by ocean-currents on the temperature of adjacent countries. Of one of the warmest of these currents, (the Gulf Stream,) Lieutenant Maury relates that "the quantity of heat discharged in a winter's day would be sufficient to raise the temperature of the whole column of air that rests upon France and the British isles from the freezing point to summer heat."

It is a curious fact that a large proportion of the sailors who yearly leave our shores on voyages of three or four months' duration, are totally unable to swim. At first this appears to amount to foolhardy recklessness. But it behoves us to pause before venturing on so sweeping an assertion, lest we include in our condemnation other and higher personages than poor Jack, with only his own life at risk, and fearing lest a knowledge of swimming would imply distrust of the ship in which he sails. We need hardly call attention to the provisions made for the tending of the wounded during the last war to show that there are higher folks than the denizen of the fore-castle who appear to reason in much the same manner. They seem to take it for granted that the British soldier, if not quite invulnerable, is entirely insensible to the pain of a wound, or to the agony produced by roughly jolting him to hospital quarters across a rugged battle-field, MACADAMIZED by death. Otherwise, we should assuredly have heard ere this of some fitting reward offered for the most simple and effective ambulance that mechanical skill can contrive for the conveyance of the wounded, "gently and humanly," from such sad scenes. Assuredly the nation would not grudge hundreds or thousands for the invention of a perfect ambulance to convey our wounded homewards. If "nothing decks a soldier so as doth an honoured wound," nothing so well becomes the country for which he suffers as earnest thoughtful care to provide every possible help for its defenders in their time of direst need.

We noticed, some weeks ago, the late alarming prevalence of yellow fever on board the steamers of the West Indian Mail Company, and called attention to the disgracefully bad management which permitted these vessels to take up such a position at the coaling station in the harbour of St. Thomas, that they shipped a supply of malaria almost as surely as they shipped their coals. The *La Plata*, lately arrived at Southampton, is the first vessel which has for several months made the voyage without the occurrence of death on board from fever; Yellow Jack being especially inimical to the English Jack Tar, if ever it gains the master hand. This immunity of the crew and passengers of *La Plata* appears to be solely due to the wise precautions taken by Dr. Schuyler, the surgeon on board. On the coast of Africa.

there were recently instituted some investigations as to the prophylactic virtues of quinine against yellow fever. The results were favourable, although the experience of its use was but limited. The surgeon of the *Plata* determined to adopt the same plan of treatment. A few days, therefore, before the steamer's arrival at the West Indian station, he commenced the systematic administration of quinine to all on board—officers and crew. Once a day all hands were piped to physic, and each took his dose of bitters. The results of this practice have been most satisfactory. Neither during the stay of the *La Plata* at St. Thomas', (though several adjacent vessels had yellow fever on board,) nor on the subsequent homeward voyage, did there occur a single case on board. The *La Plata* is the first West Indian steamer which has arrived with a clean bill of health for several months—a result undoubtedly attributable in great measure to the course pursued by Dr. Schuyler; whose energy, skill, and care were warmly commended by the quarantine officers on the vessel's arrival at Southampton.

THE constantly-recurring necessity for keeping up to their work those who hold authority over paupers, may well lead us to doubt their possession of all the tremendous zeal claimed by these power-loving persons on every possible occasion. Abandon a workhouse or other pauper establishment to its own courses, and leave its rulers to their own devices, and the whole machinery rapidly gets involved in the most marvellous confusion. Then members of the governing bodies tightly shut their eyes in despair, or dogged indifference; and so things drift on as they will, until Nemesis inspires some commissioner or inspector to visit the evil-managed institution with the determination to reform, and visit the sins of its rulers with strong and just condemnation.

From the eleventh Report of the Commissioners of Lunacy, we learn that the affairs of the Norwich Infirmary Asylum for paupers, have gone on much in this way:—The "unceasing suggestions for improvements indispensable to render the building even a tolerable residence for its inmates," which during the last ten years have been made in the entries of the commissioners, are stated to have been, "with very few exceptions, systematically disregarded." The defects pointed out and left unremedied, are then described, and the report adds: "Neither was there any faith to be put in what, to outward appearance, might even have been taken for improvement. It was discovered, for example, that in reference to a considerable number of beds occupied by dirty patients, the practice existed of removing them in the morning, and of substituting, merely for show during the day, clean beds of a better appearance, by means of sheets and blankets placed on the bedsteads, which were regularly taken away at night, and the inferior beds replaced. The Infirmary Asylum of Norwich, in short, has been altogether unfit for its purpose during the whole period of our visitations, and has been to-

lerated as a temporary asylum merely, in some trifling degree, better than the crowded and ill-ventilated Norwich workhouse, but defective in almost all requisites for decent comfort, and altogether wanting such improved means as are now in general use for the treatment of lunacy. It is our intention, therefore, to apply to Secretary Sir George Grey to enforce, without further delay, upon the authorities of Norwich such a provision for their insane poor as will comply satisfactorily with the requisitions of the statute."

It has passed into a proverb that whilst Heaven sends our meat, the cooks are supplied from quite another source. How many a husband has had occasion to sympathize with Petruccio, exclaiming in his wrath, "Where is that rascal cook?" How many have envied Dan Chaucer's jovial band of pilgrims their possession of a cook, who

"Cowde roste, seth, broille, and frye,
Make mortoux and well bake a pie!"

Yet with the plain fact before us, that all, whether rich or poor, like their meat toothsome as well as wholesome, and that one of the ways to the heart is certainly through the stomach, the science of cooking is so sadly neglected amongst us that good digestion too often refuses to wait on appetite, and our cooks seem only emulous of serving in that famous school where the pupils' supply was twice as much as they could eat and three times as much as they could waste. For the axioms that make fortunes in the parlour are altogether despised in the kitchen; or construed backwards, as though the "Cook's Oracle" commanded that functionary to make much go a little way; to waste that want might follow; to consider no bread better than half a loaf; to aim at spoiling the broth without too many cooks; and generally to light the candle at both ends. Hence the domestically-disposed husband so often sneaks off to dine at his club, sooner than be compelled to pick a bone of contention out of the home-cooked joint, or find an apple of discord in the ill-made pie. Hence the discontent of the working man on discovering that the available culinary knowledge of the "plain cook" whom he married in hopes of a comfortable meal daily, is confined to producing him a "broth of a boy" yearly.

Without altogether accrediting the definition of the satirist, who distinguished man as an animal that cooks, it must be conceded that the preparation of the food by which his fabric is renewed materially influences his health and happiness; since this food may be made readily assimilable or converted into a substance difficult of digestion—the very raw material of dyspepsia—by the process of cooking. Moreover, we know that the real culinary art consists in making that palatable and easy of digestion which, although replete with nutritive material, is neither savoury nor tempting when seen in the rough.

This lands us at the point to which we would direct attention. Of the three hundred thousand cattle and million and a half of sheep annually

slaughtered for the London market, a very large proportion is vended as rough meat. Though equally rich in nutrition with the briskets, sirloins, and haunches devoured by the aid of silver forks, it is sold to the poor at much cheaper rates, and might by them be readily converted into messes as dainty and even more wholesome than are, *en passant*, handed round at the tables of the rich. This is not done, because the English poor know little or nothing of even the first principles of cooking. If in his attendance on the poor, a medical man order a simple broth, he often has to instruct the anxious but ignorant mother how to prepare it; or he will see a solid lump of steak plunged in boiling water as preparation for the beef-tea he has prescribed. Through the same ignorance every attempt to turn to account the daily food proves a failure; and the labouring man too often returns to work with his stomach loaded with a hard crude mass of food, that has cost him three times more money, and is three times more difficult of digestion, than might have been prepared had his wife known how to cook. Yet, as cooking is not an intuitive gift, it is difficult to blame a poor woman without means of learning how to dress food well and cheaply.

We, therefore, willingly direct attention to an institution, recently established by a committee of ladies, for the purpose of imparting this knowledge to the poor. It is proposed also to instruct girls desirous of becoming cooks, or to teach those already so employed; and especially to educate those qualifying as nurses in preparation of articles of diet for the sick. The present situation of this "School of Cookery" (for that is the title) is 190, Albany-street, Regent's Park. The articles of food prepared in the kitchens are sold to the poor at little more than cost price, whilst regular customers can have their children taught the elements of cookery and the first principles of housewifery gratis. The laudable efforts of the society will be greatly assisted by persons ordering dishes even of the most elaborate kind for their own tables. There is a clause in the prospectus particularly addressed to the profession, and which we trust may induce practitioners to assist so praiseworthy an institution. It states that "orders from medical men will be received, and the food sent to them if required."

The gentlemen of the road who formerly made such edifying ends at Tyburn tree, were wont to limit their demands to money or life. The modern quack differs only from the highwayman in taking both; and being protected by law in his exaction. No lie is too barefaced, if it serve the purpose of attracting flies to his web; no demand too exorbitant if the amount can possibly be squeezed out of the luckless victim. Any ignorant foreign vagabond who has "left his country for his country's good," or scoundrelly knave, without conscience, character, or sense of shame, may here announce himself as a qualified practitioner; and permanently injure the health, or

sacrifice, as too frequently occurs, the lives of our countrymen, without any notice taken of his proceedings. How different it is when an unqualified man ventures to invade the sacred ground where the lawyers gather their harvest, is seen by a case tried at the last Wakefield sessions. An unqualified man obtained money from a woman, under pretence that he was a barrister, and would plead her cause. He was forthwith committed for trial, and the enormity of his offence gravely commented upon. That the members of the legal profession should thus carefully maintain their honour, and that dignitaries of the law should be anxious to uphold the dignity of the profession, are acts of justice to themselves as well as to the public. In contrast with conduct so commendable, the selfish apathy of the heads of our medical corporations, and their entire disregard of the honour and dignity of the profession at large, appear still more striking. Members of these bodies may degenerate into charlatans, and disgrace the whole profession by their conduct, yet no notice is taken of their proceedings, and even when legal power of proceeding against an unqualified quack or impostor is possessed, he is allowed to escape unscathed. Thus it was proved in the late proceedings against Joseph Kahn, that this man supplied medicines, and he even asserts as much in the beastly book given to foul-minded men or weak fools who enter the doors of the obscene exhibition in Coventry-street. Yet no proceedings have been instituted by the Apothecaries' Company, who alone possess the power of putting a stop to this part of the trade of that infamous band of harpies—the advertising quacks.

THERE appeared in a late number of the *Quarterly Review* a very careful and elaborate article on Lunatic Asylums, understood to be from the pen of Dr. Wynter. Therein definite expression was given to an opinion which has been for some time gaining ground, that brick-and-mortar monstrosities like the asylum at Colney Hatch for the lodgment of lunatics, are mistakes; if the object in view be the restoration of those in whom the mind "has fallen from its high estate." Against the internal administration of those unwieldy abodes not a word can be said. It is the system that is in dispute. For psychological medicine has happily shaken off the lethargy that so long oppressed it, and now, looking for higher and happier results than the mere comfort of the lunatic, seeks his cure. The word *asylum*—a refuge or sanctuary—as applied to an abiding-place for the insane, is now become an inappropriate term.

It is part of our national creed that we can accomplish any practical work in which success has been attained by others. Now, we learn, by indisputable evidence, that the number of cures, under our present method of treating lunatics, amounts to 15 per cent.; whereas, under an entirely different system pursued at Gheel, in Belgium, and elsewhere on the continent, the resulting cures amount to 22 per cent. The evident

deduction is, that the latter system ought to be carefully examined, before the less successful plan now pursued in England be further extended. We therefore learn with regret that 150 more patients are to be received in Colney Hatch, in addition to the 1258 lunatics already congregated within its walls. It is an expressive act of injustice that this immense number should be added without any further increase of the medical staff, two medical officers being considered sufficient to take charge of the aggregate number of patients. But—when we remember that the very basis of the great success of the system pursued in Belgium consists in the dispersion of lunatics, rather than huddling them together by thousands beneath one vast roof—the recent additions to an asylum, already the largest in the world, seem both unwise and wasteful.

We repeat that the great question to be decided is necessarily one of system. County magistrates, though discriminating as Justice Midas and unbiassed as Justice Shallow, cannot be suffered to decide on a subject so important, and with whose true bearings they are about as conversant as a gamekeeper is with metaphysics. It therefore devolves on the Commissioners of Lunacy to inquire minutely into the details of a mode of treatment so infinitely more promising in its results than the system at present pursued in England. But when arrived at this conclusion, there still remain doubts as to the qualifications of the examiners themselves to decide on so important a question. *Quis custodes custodiet?* We know how high the standard should be by which their qualifications are determined; for their responsibility is a heavy one. Long study and an intimate practical knowledge of insanity should prove the chief recommendations; yet a mean, suspicious policy has determined that no one shall be selected for a lunatic commissioner who has been connected with an asylum for two years previously. Hence the wisdom and sagacity of such men as Connolly and Winslow are passed by; and there is only one of the eleven commissioners who can pretend to possess any of the qualifications above-mentioned as so essentially important. There are several medical men, it is true, possessing, from their professional knowledge, a certain insight into the matter; but as little suspected of having particularly studied the subject of lunacy as they are of having committed the sin of being connected with an institution for the insane. As to the rest of the commissioners, they are private gentlemen, of average attainments, but assuredly possessing no more special fitness for the office of Lunatic Commissioner than for any other comfortable birth with a snug income attached to it.

Wonderful cures are the daintiest tit-bits of *gobemouches*; persons with large capacities for belief, who willingly credit anything that anybody asserts sooner than believe the evidence of such faculties as they possess in lieu of senses, or the suggestions of common sense, which unfortunately is such an uncommon sense. The clowns who

swallow the wonderful relations of Antolycus concerning the accouchement of the miser's wife, and Mrs. Newton Crosland, with her bevy of wise women, preferring to believe in spiritualism, belong to the same class. A humbug is not less a humbug because it happens to be blasphemous as well as untrue; and we confess to a difficulty in making spiritual "manifestations" square with any christian creed.

This unbounded credulity has done much harm in its time, both directly and indirectly. For sensible folks have, perhaps, been rendered over-sceptical by being again and again deceived with flaming accounts of miraculous discoveries. We are become people of little faith because we have been so frequently deluded. On one subject especially our credulity has been sorely tried. Within the memory of man innumerable infallible remedies for hydrophobia have been proposed and tried, have failed and been forgotten. It can hardly, therefore, be considered surprising that the French Academy looked with disfavour on a proposition made some time ago by M. Guérin Méneville to undertake a series of experiments for testing the alleged powers of the *cetonia aurata* (the rose-beetle), a remedy much relied on in Russia, where the frequency of the disease amongst wolves renders hydrophobia very prevalent. At the last meeting of the Academy, M. Méneville related a case cured by a Russian, named Levachoff, whose family have long possessed a secret remedy said to consist of this cetonia. He read the details of the case from a letter of Prince Eugene, of Seyn Wittgenstein, recently published by direction of the Scientific Society of Marine, at St. Petersburg. In this letter it is stated, that three doses suffice to cure the disease in its most advanced stages, both in men and animals, preserving them also from any danger of future infection. The cure related on such apparently reliable authority, was alleged to be the 1791st effected by the employment of the remedy.

A SOLDIER is an expensive article under the most favourable circumstances, even though he never leave our shores. The cost of his education, equipment, and maintenance is so great, and the loss of all expended on him so entire when he dies, that any neglect of his health is wicked and wasteful improvidence. Terms far stronger than these would scarcely express the iniquity of any neglect in providing for fitting medical attendance on the troops fighting our battles in India, sent out at an enormous cost, and having additional claims to our anxious care on account of the manifold dangers to which they are exposed from enemies more dreadful than the sword—the pestilence that walks in darkness, and the enervating heat of a tropical sun.

We know now, as those acquainted with the country long ago foretold, that disease has sadly thinned the gallant troops that have hitherto had to do the work of the avenger. That those which arrive fresh from England will not similarly suffer is more than we can reasonably hope.

Hence the absolute necessity of providing professional aid in addition to the regular medical staff of the army, and the expediency of rendering the latter as efficient as possible. The Committee of the House of Commons to inquire into the condition of army assistant-surgeons advised, in their report, that certain improvements should be immediately made in their position and pay. Few and inadequate as were these changes, their adoption would influence many efficient surgeons unwilling to join the army under the old oppressive regulations. If, therefore, the suggestions made by the committee have been ignored, and the present deficiency of surgeons is at all attributable to such ill-judged parsimony and perverseness, the death of every soldier whose life is lost for want of requisite attendance cannot fail to be, in part, due to the same cause.

The deficiency of army assistant-surgeons has been notified by advertisements. Under present circumstances, and considering the necessity for efficient and experienced surgeons who have seen active service, it might be supposed that the applications of acting assistant-surgeons who served in the Crimea, and who can overlook the mode of their dismissal, would be eagerly accepted. But one of these gentlemen has published an account of his application for employment, with a result so marked and extraordinary that it needs no comment. Having left his practice to proceed to the Crimea, he there served for eighteen months with credit. Before joining, he paid £32 for his uniform, being informed that the appointment would be permanent. On his return, he was turned adrift with two months' pay in his pocket. Being only thirty-five years old, and possessing the double qualification, he recently applied for service in India, and received the following reply from the Director-General:—

"In reply to your letter, I have to state that you are not eligible for an appointment in the army, on account of your age."

It is difficult to comprehend the policy that, when surgeons are greatly needed, thus objects to a seasoned campaigner, who two years ago was acting as an efficient officer, and is now in the prime of life, yet takes pains to enrol raw youths fresh from college, without any past services claiming recognition at the hands of the authorities.

VERY careful was the ancient navigator of his safety, and of the sea-worthiness of his vessel;

"illi robar et æs triplex
Circus pectus erat, qui fragilem trunc
Commisit pelago ratem."

Our modern mariners and ship-owners are of other sort. In place of the "æs triplex," our merchant seaman has nothing to trust to but the proverbial "light heart and a thin pair of B's," with a reserved confidence in the good offices of the "sweet little cherub who sits up aloft," and is reported (when not employed in maintaining a posture rather difficult to one with such limited capacity) "to watch o'er the life of poor Jack."

Of the ship-owner's culpable carelessness and disregard for human life, we have statistical evidence in the Register of Wrecks just published by the Board of Trade. Of 368 vessels totally lost in 1856, no less than 54 were in such condition that they should never have been allowed to put to sea; 17 were abandoned, and 37 foundered from unseaworthiness. One of these vessels was so rotten, that the anchor pulled out her bows, and she sank with her crew. Verily the Roman poet was premature when he wrote that

"Nil pletis timidus navita puppbus
Fidit."

The Wreck Register for 1856 also directs attention to another startling revelation. During this year the number of wrecks and casualties that occurred on the coast and in the seas of the British Isles amounted to 1153; yet the proportion of these that happened during storms and from the dangers of the sea were only 4·30 per cent. The rest were all either wrecked through ignorance, neglect, and spurious economy, or, worn out and rotten,

"went down at sea
When heaven was all tranquillity."

It was a saying of Sydney Smith, that a board was at once incorrigible and invulnerable; for it had neither a soul to be saved nor a body to be kicked. Members of our own profession have often too great reason to agree with his witty dictum. Thus it is probable that no men in England, except those composing boards of guardians, could reconcile their consciences to the belief that the remuneration afforded to Union Medical Officers, under the regulations of the Poor-law Board, is excessive. Few men would be disposed to consider exorbitant an average payment of 2s. 10½d. per case, intended, as Mr. Griffin pathetically says, "to cover the expenses of carriage, horses, taxes, rent, assistant, drugs, instruments, and other appliances," and "of which the surplus is intended to compensate for skill, time, anxiety, and hard labour expended during an attendance of an average duration of ten days." The soft-hearted public and the unreasonable doctor might, indeed, think it rather scant pay; but we do not remember to have heard it suggested that the rate was extravagantly and unjustly high. However, such is the view of the case taken by the guardians of the Bolton Union; and accordingly they have started an economical coach-and-six, in which, by the aid of a somewhat pettifogging ingenuity, they drive their Union Medical Officers through those Parliamentary regulations of which they are the constituted guardians. They appear to have been affected by a misgiving as to the dangerous tendency of the fees (included in the above average) allowed by the Poor-law Board in cases of severe accident or surgical operation demanding an unusual sacrifice of time and labour on the part of the medical officer. To most minds this might seem a very humane and fitting regulation, providing extra fees for extra

work, in order that the poor man might be the better attended in periods of grave emergency. But the oligarchs of Bolton seem haunted by a fear that to give their medical officers so direct an interest in injuries to life and limb of the paupers under their care might prove dangerous to the welfare of the population, and, far more important in their eyes, exhaustive of the pockets of the ratepayers. Acting under this impulse they have acted illegally, and so fixed themselves on the horns of a dilemma. For, having entered into a private agreement with their medical officers, that they shall forego, without additional salary, the extra fees to which they are justly entitled, the guardians lately became impressed with the recollection that such an agreement is directly illegal. To their pure and righteous minds, judging the conduct of others by their own inclinations, no after result could follow than that each medical gentleman would immediately break his word, and claim the fees he had privately agreed to relinquish. Wherefore they proceeded, at a late meeting, warily to break these horns. Thus: first, they changed the nature of the appointment from a life term to one of annual tenure; next, they intimated to their medical man, that, although no binding contract could be made in a business so illegal, yet, if the said officer should enforce his rights, "his place should be made too hot to hold him." Five gentlemen recommended the board to adopt a course of proceeding "more legal, more honourable, and more straightforward"; but they were over-ruled by a majority of fifteen, who viewed the question in a different light.

We remember hearing it told of Robert Hall, that after a long discussion with a clergyman who had improved his circumstances by altering his views, and who had met his most logical conclusions by constantly repeating "I don't see it in that light," or, "No, I don't see that at all," he finally lost his patience. Taking out a pencil, he wrote on a piece of paper the word *Truth*, and asked, "Do you see that, Sir?"

"Yes."

Then, covering it with a piece of gold, he inquired, "Do you see it now, Sir?"

Substituting the word "honesty" for "truth," we commend the moral of this anecdote to the consideration of the guardians of Bolton Union, and all other parochial authorities whom it may concern.

M. PERRET, editor of the Parisian *Moniteur des Hôpitaux*, has recently come to grief. Venturing, in conversation, to speak "disrespectfully" of the Emperor Napoleon, some disreputable scoundrel forthwith reported his words, and he has been sentenced to three months' imprisonment.

The Emperor Napoleon is renowned for a clear judgment and a strong will, and nothing but disaster could result from the failure of the former endowment, whilst the latter remains in force. We trust, therefore, that this sentence of impris-

onment for such an offence has not received the Imperial sanction. For, without alluding to the injuries inflicted on others by the removal of M. Perret from his sphere of usefulness, it is evident that men of liberal education, and belonging to a profession which owes its advancement to individual freedom of thought, are of all others most unlikely to be coerced by imprisonment, or to be convinced by rule of rod.

Reviews and Notices of Books.

How to Work with the Microscope: A Course of Lectures on Microscopical Manipulation, and the Practical Application of the Microscope to Different Branches of Investigation; delivered during the Winter Session of 1856-7. By LIONEL S. BEALE, M.B., F.R.S. London: J. Churchill. 1857. pp. 124.

THIS is one of the most useful and practical works which has yet issued from the press on the subject of the microscope; it is not only likely to prove of the utmost value to the student, but also to the busy practitioner, who may find time profitably to consult its pages. The author's reasons for publishing these lectures he states in his preface to be—

"An earnest desire to assist in diffusing a love for microscopical inquiry, not less for the pleasure it affords to the student than from a conviction of its real utility and increasing practical value in promoting advancement in various branches of art, science, and manufacture; a wish to simplify, as far as possible, the processes for preparing microscopical specimens, and the methods for demonstrating the anatomy of different textures; and the belief that many who possess microscopes are deterred from attempting any branch of original investigation, solely by the great difficulty they experience in surmounting elementary detail and mere mechanical operations,—are my chief reasons for publishing this elementary course of lectures, which was delivered during the past winter."

We will give a glance at its contents, which comprise eight lectures. In the first lecture the instrument itself is described, with special allusion to its optical portion, and to the mechanical appliances for moving the object, altering the focus, &c. A list of English and foreign makers is given, with reference to some of the peculiarities of their instruments. The second lecture is devoted to the examination of objects by reflected and transmitted, as well as polarized light; illumination by artificial light; on drawing microscopical specimens, and on measuring objects. The student will find the directions given here very useful in drawing objects, the simplest method being, to place the paper upon the same level as the stage upon which the object is situated. All the various instruments required in microscopical research are described in the third lecture, and they comprise a number of simple and useful objects. Amongst the preservative solutions enumerated, one of the most useful will be found a solution of glycerine in camphor water—equal parts of each. The camphor prevents the tendency to mildew. The same effect is produced

by mixing it with naphtha and water, or the creosote solution.

No microscopical specimen can be preserved without a proper cell for its reception. The cell is the interspace between the two pieces of glass to contain the specimen, surrounded by some substance slightly thicker than the object itself. These cells are composed of various materials, and prepared in various ways, and are of such importance, as every one familiar with the microscope is aware, that the fourth lecture is wholly devoted to their description. The author speaks in his next lecture of the general characters of the different tissues, and the methods by which their minute structure may be demonstrated in the microscope. He here shows, amongst other matters, how the anatomy of organs is more easily demonstrated in the lower animals than in man, and the higher animals; and his observations, in relation to this fact, are very interesting and instructive. The time after death when tissues should be examined, is dwelt upon; in relation to ciliary motion, the time to see it will depend upon the class of animal chosen for the purpose; thus, in the active birds, it ceases very soon; but in reptiles, from being cold-blooded and more slowly nourished, it lasts for many days after death. One of the most convenient and always ready methods of showing the ciliated epithelium, we have found to be in the gills of the common oyster, which can be had at any time. The sixth lecture—one of the most important in the book—speaks of the examination of the tissues and their preservation as permanent objects, either in air or aqueous fluids. The hard and the soft tissues, and the special medium for the preservation of each, is carefully described. The student is also told how to separate deposits from fluids.

Not the least beautiful and instructive microscopical preparations are many of the delicate injections of minute vessels and capillaries distributed to the various textures of animal bodies. These cannot be prepared without much care and delicacy, and a knowledge how to do so is very essential. This is given in a clear and concise manner in Lecture VII., which treats of natural and artificial, and transparent and opaque injections, and the manner of preparing portions of these injected preparations for the microscope. The last lecture is probably the most important, and full of originality, and its first part treats of what may be fairly called the chemistry of microscopy. The use of chemical reagents in microscopical investigations is the very refinement of chemistry, and its advantages in examining the minimum of quantity are at once apparent. The author's opinion on this branch of minute inquiry we freely give, as it opens out a new field of research, which has hitherto been left almost untouched.

"This part of the subject is most important, and it is perhaps, of all the various branches of microscopical research, that from which the greatest advantages may be expected to result—an investigation which will certainly reward all who earnestly devote themselves to its study.

It is probable that great changes will take place in our views of the nature of many minute structures, when chemical analysis shall be more intimately associated with microscopical inquiry. Each branch of research will derive assistance from the other, and by the aid of both the exact nature of various structures may be ascertained, which cannot be elucidated by either inquiry separately."—p. 86.

Instances are then given of the use of reagents, and the means employed for testing for various substances, such as carbonate and phosphate of lime, phosphate of ammonia and magnesia, &c., &c. A few words are said on the subject of taking notes of microscopical observations, and the necessity of always aiming at exactness of description; of the importance of making sketches, and how to take photographs of objects in the microscope; and lastly, the fallacies to be guarded against in microscopical investigation. A series of tables for practising the use of the microscope and manipulation, together with a list of the apparatus required for microscopical research—much of which is simple and inexpensive—appropriately concludes the volume, with, at the same time, a full index.

This little work will supply the student with everything he desires to know about the microscope; it will teach him to study it practically, and without saying too much, it will fully explain to him "how to work with the microscope." We recommend it to every one with satisfaction.

The Use of the Microscope in Clinical Medicine. Illustrated. No. I., Urinary Deposits: with Fourteen Plates. By LIONEL S. BEALE, M.B., F.R.S. pp. 33. London: Churchill. 1857.

THIS is the first of a series of numbers illustrating the use of the microscope in clinical medicine, and is devoted to Urinary Deposits, of which fourteen plates are given, containing upwards of sixty figures, most of which were carefully copied from Nature by the author himself. Although the author states in his Introduction that "the figures have no pretensions to be considered beautiful drawings, or to be looked upon as works of art, but it is hoped they will be found accurate, although rough, representations of Nature, as the greatest pains have been taken to render them faithful copies," we must differ from him in declaring some of them to be not only beautiful and accurate drawings,—especially Plates VII., IX., and XI.—but actually some of the best we have yet seen published. The explanation of each plate is inserted immediately opposite to it, and on the other side of the page a short description of the general characters of the deposit, and the tests employed for its detection, are given.

Besides urinary deposits, drawings are given of extraneous matters sometimes found in the urine, such as hairs, fibres, portion of a tea leaf, starch, air-bubbles, oil, &c.

The Principles of Collegiate Education discussed and elucidated, in a Description of Gnull College, Vale of Neath, South Wales. pp. 87. London: Stanford. 1855.

THE situation of this new College, in a park on

the western slope of the picturesque mountain which lies between the Vale of Neath and the Bristol Channel, is one of the most beautiful as well as healthy, that can be imagined. Besides these, the system of education is on the most extended scale, and every branch of science is taught, as well as all the preliminaries of a liberal education. It is intended, as mentioned in the programme, that every student shall pass through all the seven introductory courses; the speciality of each student engrossing his attention in the final series. The number of students is limited to two hundred, between the ages of sixteen and nineteen, and the fees 200 guineas per annum, or £70 for each term, including everything. Not the least important matter connected with the College is the appointment of a medical officer to it, although his services may perhaps not often be required. The first term is to commence on the opening of the College in October next; the course of instruction will occupy three years.

The map appended to the volume shows the situation of the College to be easily accessible from the metropolis. We wish every success may attend the inauguration of Gnull College, and trust the sanguine expectations of its founders may be fully realised.

Observations on Medical Education in the Presidency of Madras. By T. F. FERNANDEZ, M.D., F.R.C.S.

THE author of this pamphlet was requested by the Major-General commanding Jaulnah to report upon a new code of medical regulations for Madras, and he has embodied some of his leading opinions and suggestions in the paper under notice.

The apothecaries and dressers attached to the medical officers in India are a very meritorious, industrious, and faithful class of public servants, but it would seem by the author's account that they are, generally speaking, deficient in practical acquirements.

"Unaccustomed to observe the group of symptoms which constitute an individual disease, and to compare together the living phenomena with the descriptions of authors whose delineations are most true to nature, they are often at a loss to recognise its distinctive characteristics, and fail to identify it by name. They have but a small idea of the manual dexterity to apply a bandage with neatness and facility. If they dress a common sore, they mop the surface so as to destroy the fine pellicle which covers the incipient granulations of a cicatrising wound, so that it will take twice the proper time to heal. They seldom know the form of dressing, or the medicinal application best suited to the kind of ulcer. As surgical assistants they have neither expertness in manipulation, lightness of hand, nor presence of mind; but are clumsy, and cannot find their hands to render useful assistance in operations, because they have been unused to the management of injuries, and the adaptation of surgical apparatus. Even as dispensers of medicine patients often complain of the anomalous appearances of their draughts; and now and then an ominous circular comes to hand from the Medical Board, enjoining us to write our prescriptions in English, or to return to some old-fashioned name, when we prescribe an active drug. In cases of emergency, which require coolness, steadiness, and resolution, for the calm con-

sideration of what should be done, common difficulties disarm them, and their faculties are dispersed into a state of confusion, because they have not been habituated to face such occasions of danger. Or the predicament may vary: signals of import in approaching danger, which ought to stimulate to vigilance, of which prompt advantage should be taken, escape their cognizance, and thus an opportunity of protracting, perhaps of saving, life is lost. Yet we cannot attribute blame to their remissness, nor supineness, much less unconcernedness, because they have had so little to deal in their lives with the stern realities of disease. But the predicament may be worse than all this. You shall find a class of men, void of all diffidence, insensible to danger or to fear,—of whom there are not a few,—who, with a warton presumption and indifference to the onus of responsibility, will be betrayed into undertaking operations which they have no notion of contriving; you shall find one ready to attempt the Cæsarian section, pausing at no risk, and deaf to cries of pain, with a most faint conception of the steps to be observed in the procedure; and after it is over, beset with no more compunctions than dread of meeting the apparitions of the sufferers."—pp. 10-12.

Clinical instruction is the obvious corrective for this serious evil, which the author would accomplish by means of special medical tutors, selected from those Indian students who have headed the classes of their respective years, in the manner our house-surgeons are selected here.

"The preceptor, having sprung from their own class, and being conversant with their habits of thinking, would overcome the reserve of his pupils, whose subjection of mind disposes them to distrust their own powers in the presence of their superiors, which also, in a manner, limits their quickness of perception. By his ready knowledge of the vernacular, the tutor would further set them at their ease, and, with an instinctive apprehension of their difficulties, as often as they might run astray, point out the proper course to surmount them. The tutor should attend the medical and surgical lectures, in order to imbibe the doctrines of the professors, that he may instil them with additional emphasis upon the class, by demonstration upon apposite cases. Precept and practice would then go hand in hand. He should teach the student the proper method of examining a patient, so as to elicit a full account of his present condition, and direct him in drawing up a statement of the case; in fact, to transfer the problem to paper by an intelligible and orderly arrangement of symptoms. Beginning with slight deviations from health to local ailments, the pupil would advance by degrees to acute cases, with a larger assemblage of symptoms. He would trace, with the tutor's assistance, the varied play of the functions in disease, to their natural causes, analyse complex cases, and be led on to detect the conflicting agencies at work. For each condition he would be guided to the scientific means of relief, restorative or counteracting, as the case might be. In less conspicuous complaints the tutor would search out the more latent signs, try every link of the chain which connects the symptoms, and, in their natural course, turn all practical opportunities to account that would educate the senses, and instruct his pupil to interpret the book of Nature. For want of proper furtherance in early practical education, we observe how often medical men, not initiated in the cypher of hysterical complaints, will puzzle over a case for half an hour, in which the flaw in the symptoms is as clear as daylight; and, after all, remain in doubt themselves, although they have quite settled the convictions of the patient. Not before it is too late her ghastly looks attract compassion, and marked general, if not discriminating, notice."—pp. 13-15.

Dr. Fernandez justly remarks—

"The superiority of knowledge derived from personal observation, and the relief afforded to its acquisition by

colloquial explanations, tend to excite the mind to curiosity. Each step so gained is felt by the pupil as a real advance, and facilitates further progress. Above all other, practical knowledge begets self-confidence and promptitude, sharpens apprehension, quickens the faculties of conception, comparison, and inference, improves the judgment, and qualifies for executive duties."—p. 15.

There are some other suggestions which deserve the attention of the H.E.I.C.S., with which we close our extracts:—

"I have lying before me a list of ninety-six drugs, in more or less common use, supplied from the vegetable kingdom, which are either the product of the East Indies or adjacent islands, or could be grown here. Of these but an insignificant part are purchased in this country, the bulk of them being supplied by the Apothecaries' Company. I would solicit particular attention to a few of the consequences. Take the leaves of hyocyamus, grown at Serhampore and elsewhere, for mere example. It is first exported to England as an article of merchandize, and when presented in the drug mart, bought by the Apothecaries' Corporation. In their hands it is ground to powder, reduced to extract, or infused for tincture. The hyocyamus, in these forms, is re-imported by us. But mark! tinctures are all made with exciseable spirits, the duty on which is exceedingly heavy in England. Of course in India, spirits of wine is subject to no such levy, and, moreover, it can be distilled at a fraction of the cost it is at home. The toddy of the common palm tree, which a poor cooley may drink *ad libitum* for the twelfth part of an anna, yields in the copper stills of our maritime provinces, or in the interior in earthen vessels, one-eighth part of proof spirits. We know that Ceylon exports above 1,000,000 gallons of arrack, at 10d. or 1s. per gallon; perhaps the very best may reach 1d. 6s. (twelve annas.) Notwithstanding, all our sulphuric ether, spirits of nitre, chloroform, and other medical spirits, are distilled at home. Again, the mineral kingdom of India may be made equally productive. I am sure that there are not finer crystals of sulphate of iron in existence than can be bought in the common bazaar of this very place. The professor of chemistry could very readily furnish an excellent substitute for quinine at a third of the cost, which, if plentifully distributed, medical officers would employ in lieu of it; so that an ounce of quinine would suffice for a pound that is expended now. In short, most, if not all, the chemical compounds which enter into the Pharmacopœia, should be prepared in the laboratory at Madras. The work would be no more than is actually performed at the Veterinary School of Alfort, near Paris, for the use of that establishment. And most, if not all, medical plants might be grown to perfection on the Neilgherry Hills, to supply the whole of India from its medical herbarium, were the ground occupied, the head gardeners' houses built thereon, and Paxton and Hooker requested to make the appointments. But I have trespassed too long on the reader's patience, and need enough to indicate that, by better management in the department of medical stores, a very large saving would accrue."—pp. 24—26.

Since this paper was written, Lord Canning has introduced a plantation of cinchona trees imported from Gera; and the new medical code, which is full of admirable provisions for the regulation of the medical department of the service, contains a large list of medicines purchasable in India. We should think that the active principles of chirayta and of the piper nigra might be substituted for general use, instead of quinine, for native hospitals.

The plantations of tea in Assam are increasing very rapidly in extent, and their produce is equal in quality to that from any part of China.

Vocal Gymnastics; or, a Guide for Stammerers, and for Public Speakers and others who suffer from certain minor Peculiarities of Utterance. With an Appendix of Cases, &c. By G. F. URLING. 12mo. pp. 89. London: John Churchill.

This is a very small work, but it contains much really important and novel information, not only upon stammering, but also upon the physiology of speech. The style is clear and lucid, the directions plain and unmistakable, and the method (as proved by the cases reported) successful. Mr. Urling is not a medical man, but he is evidently under good medical influence; and he writes and acts in the most friendly spirit to the profession, as will be evident when we say that he has been advised to publish (see the Preface) by Dr. Gull of Guy's Hospital, and Dr. Radcliffe of Westminster Hospital.

Otto On the Detection of Poisons. From the German; with Notes and Additions, by WILLIAM ELDERBROOK, M.D. 8vo. pp. 178. New York: H. Baillière, 290, Broadway, and 219, Regent-street, London.

This work is written in a clear and logical style; the subject of which it treats, the application of chemistry to toxicology, is of vital importance to the medical student, who, perplexed by a multiplicity of subjects, will, doubtless, be only too glad to find, within a moderate compass, the essential points to which his attention should be directed; and the practitioner, anxious to have the important facts of toxicological chemistry always in his mind, with such practical application as it requires, will find a desideratum in this book.

An Elementary Course of Botany, Structural, Physiological, and Systematic; with a Brief Outline of the Geographical and Geological Distribution of Plants. By ARTHUR HENFREY, F.R.S., L.S., &c. &c. Illustrated by upwards of 500 Woodcuts. Fcap. 8vo. pp. 702. London: J. Van Voorst.

This is an excellent working text-book, and has been designed and carried out by the author for that purpose. The nature and objects of the work of Mr. Henfrey may be given in his own words:—

"Notwithstanding that the author's own labours have been chiefly in the field of Physiological Botany, he quite concurs with the opinion expressed by the distinguished authors of the 'Flora Indica,' who believe that disservice is done to the cause of Botany by occupying the attention of students in the first instance with the abstract parts of the science. The largest class of students of Botany are those who pursue the subject as one included in the prescribed course of medical education. One short course of lectures is devoted to this science, and three months is commonly all the time allotted to the teacher for laying the foundations and building the superstructure of a knowledge of Botany in the minds of his pupils, very few of whom come prepared even with the most rudimentary acquaintance with the science. To direct the attention of the student to a series of isolated facts and abstract propositions relating to the elementary anatomy of plants is to cause him to charge his memory or his note-book with materials in which he can take but little interest, from his incapacity to perceive their value or applications. Some of the most important questions of Physiology are as yet in no very advanced state, and the conflicting

evidence on many of these cannot be properly appreciated without an extensive knowledge of plants.

"But if we endeavour to seize the floating conceptions furnished by common experience, and to fix and define them by a course of exact practical observation of the more accessible characters of plants—showing the relations of these as they occur in different divisions of the Vegetable Kingdom—we place the student in a position which enables him to proceed at once with an inquiry into the peculiarities of the plants he meets with, and in this way to acquire a fund of practical knowledge, which is not only absolutely requisite before entering on abstract inquiries, but is especially calculated to secure his permanent interest in the study.

"Physiology is undoubtedly of the highest importance, and from its nature is that part of the science which, were it not for the above difficulties, would with most advantage be taught by lectures. If the previous education of medical students prepared them, as it should, with an elementary knowledge of the Natural Sciences, we should make Physiology the most conspicuous feature of a course of Botany in a Medical School. In the meantime, we subordinate it to the other branches in practical teaching, and in this volume have dealt with it in what we regard as its proper place in the order of study."—Preface, p. iii.—v.

Mr. Henfrey has succeeded in his task, and conferred a benefit upon students of botany. After some introductory remarks on the objects and subdivisions of the science, and on the general character of the methods and means used in the study of botany, he divides his work into four parts: the first is devoted to Morphology, or Comparative Anatomy; the second, to Systematic Botany; the third, to Physiology; and the fourth, to Geographical and Geological Botany.

The Chemical Atlas, or Tables, showing at a Glance the Operations of Qualitative Analysis, with Practical Observations, and Cautious Indices of Tests and Reactions; accompanied by a Dictionary of Simple and Compound Substances, indicating the Tests by which they may be identified; and a Dictionary of Reagents, indicating their Preparation for the Laboratory, the Means of Testing their Purity, and their Behaviour with Substances. By A. NORMANDY. London: George Knight and Co., Foster-lane.

In an age teeming with works good, bad, and indifferent on chemical analysis, the author of the book with the formidable title now before us cannot be surprised if the chemical world should inquire, in not the most generous and confiding spirit, respecting the pretensions of another candidate in addition to the many long-existing and well-established ones for its favourable verdict. Now as we consider that Dr. Normandy has by the immense labour and care bestowed on his chemical tables a just claim to that favourable verdict, we shall briefly state the grounds upon which we have not hesitated to express our convictions.

Works on chemical analysis may be divided, for the purpose in view, into two classes—the tabulated and the non-tabulated. Amongst the latter may be enumerated the classical works of Rose and Fresenius—works that have yet no competitors worth being so-called. But as Dr. Normandy's book is not of this class, it would be hypercritical to institute a comparison. We confess that up to the appearance of this "Chemical

Atlas" we have never regarded with favour tabulated works on chemical analysis, for the simple reasons, that such works, either from the insufficiency of their details, or from the sacrifices of truth to brevity everywhere apparent in them, were unsuitable as sources of instruction for the student, and as refreshers of the memory of the experienced chemist.

But it is not so with Dr. Normandy's "Chemical Atlas." By availing himself of every device of the typographer's art, and by the ample dimensions of the pages of the "Chemical Atlas," its author has been enabled to introduce and arrange every important fact, and all the minutiae of detail which are indispensable in a work professing to be an instructive and complete guide in chemical analysis.

Considering these things, we are drawn to the conclusion, that amongst tabulated works on analytical chemistry, Dr. Normandy's Atlas stands unrivalled, and that by its publication we learn that he has laboured successfully to remove the just prejudice attached to works of that class.

Light in the Valley: My Experiences of Spiritualism By MRS. NEWTON CROSLAND, author of "Partners for Life," &c. Fcap. 8vo. pp. 228. London: Routledge and Co.

MRS. CROSLAND admits it is probable that "from a certain order of minds the present production will elicit a degree of ridicule and contempt." She might have added, there is another class who will regard it with commiseration and pain. Admitting that there is a certain amount of cleverness in some passages of the work, it cannot be denied even by "those who wish to judge leniently of the manner in which she has accomplished her undertaking," that there is a vast amount of matter in this book bordering on the impious, and much that is most offensive to any right-minded person. We shall not go into the absurdities of Mrs. Crosland's production, which seems all misty and dark, though strangely entitled "Light in the Valley." One quotation will suffice to show of what materials this book is composed:—

"One of the most highly-developed mediums with whom I am privileged to be acquainted, frequently emits from her person, and especially from the ends of her fingers, the most delicious scent of roses. The phenomenon generally occurs suddenly, and at periods of great exhaustion of the psychical fluid, consequent on powerful spiritual manifestations having taken place; and occasionally it is followed by the odour of sweetbriar. To the facts I am now narrating, at least a score of credible witnesses are ready to bear testimony; and their evidence would, of course, remind the reader of some traditions associated with the names of certain saints, of the truth of which we are too apt, it may be, altogether to doubt. Nor is the medium to whom I more particularly allude the only one I have to mention as being thus singularly gifted. A child medium, a little girl whose mediumship is now developing, emits the rose odour; and we have been informed that this emission of flower scents is about to be strikingly developed as a token and result, of certain capacities of mediumship.

"Indeed, our spirit friends have instructed us that every human being so far represents a trinity of flowers as to have three flowers belonging to him, the scents of which are capable, under certain circumstances, of becoming apparent to the physical sense. The three odours correspond to the outer, the inner, and the innermost of our being; the outer manifesting itself by far the more readily. It is a singular circumstance that the medium in whom the rose and sweet briar odours are so palpable, has herself been able, in numerous instances, to distinguish the spirit-flower odours of other mediums, though imperceptible to their friends in general: such, for instance, as the scent of magnolia, violet, mignonette, and scabious; the fact of her really having done so not resting merely on her assertion, but having been in several instances confirmed by spirit messages. Perhaps it is not quite out of place to remark, that the rose appears to be peculiarly associated with symbolic spirit teaching—as if its heart-shaped petals, its love colour, and its spherical form, were replete with subtle meanings."—pp. 201-3.

Essays from the "Edinburgh" and "Quarterly Review," with Addresses and other Pieces. By Sir J. F. W. HERSCHEL, Bart., K.H., &c. &c. Octavo. pp. 750. London: Longman and Co.

No greater boon can be conferred upon society than the publication, in a collected form, of contributions to literature and science scattered about in various periodicals by eminent writers. This work can add nothing, perhaps, to the great fame of its illustrious author, but it enables the reader to form an estimate of his great and varied talents, such as he was not in a position to make previously. It is really a delightful volume, and contains papers and addresses on a variety of subjects. There are some exquisite poems and translations added to the more weighty productions.

Man: his Structure and Physiology Popularly Explained and Demonstrated. By ROBERT KNOX, M.D., F.R.S.E., Lecturer on Anatomy, Corresponding Member of the Imperial Academy of France, &c. With Eight Movable Dissected Coloured Plates, and Five Wood Engravings. London: Baillière. 1857.

THE spread of popular education and the desire to extend the benefits of an instruction heretofore limited to the educated few, led, no doubt, a few years ago, to the establishment of various institutions of a popular character; to the publication of numerous class-books adapted to the rising want; and to the introduction, even into the universities of England, of a course of instruction in the sciences of observation heretofore ignored by the theologian and the lawyer, and in an especial manner by that upper ten thousand to whom the destinies of England are hereditarily entrusted. The science which offered the most difficulty to its being popularized, was unquestionably anatomy and physiology; the latter cannot be taught to those unacquainted with the leading facts of the former. Now the difficulty was to explain those facts to the non-professional student, to the lawyer, the divine, the general student, who, having no views towards medicine nor surgery, could scarcely be expected to enter the lecture-room of the anatomist, and listen for the sake of mere knowledge to a discourse, obscured by a

technical language of the most barbarous kind, in presence of objects offensive to every sense. Such obstacles could only be overcome by strong minds, and such are few. Gibbon, the historian, attended the anatomical lectures of Dr. Wm. Hunter, when quite a young man, and for the sake of knowledge; Dr. Chalmers, the Scottish divine, attended two courses of lectures on anatomy—for the sake of knowledge; and we could name other great men who viewed their education as imperfect, so long as the elements of that art, which forms the basis of physiology, zoology, and palæontology, remained unknown to them. We have often heard it from those who were present, that the lectures on anatomy by the author of the work we purpose briefly reviewing, were attended by nearly all the most eminent members of the Scottish church; by members of the bar who have since risen to great eminence; and by noblemen, who, like the present Lord Chamberlain, Sir George Sinclair, and others, felt a deep interest in the progress of modern zoological and physiological science.

It was with a view, no doubt, of overcoming some of the difficulties besetting the study of anatomy, that Dr. Knox, to whom anatomy, surgery, and zoology, are so much indebted, has been induced to turn his attention to the popularizing the science of anatomy, retaining for it, notwithstanding, its strictly scientific character. This, with the author, we believe to be quite practicable, and what is more, we join with him in the belief that any other course must ever be most injurious to the student. We cannot do better than allow him to explain this point in his own language:

"Zoology, whether viewed as a department of human knowledge, or simply as a branch of general education, has for its bases, animal structure and experimental physiology. To omit these in a general scheme of education, or to overlook their importance in the study of those sciences which rest mainly on zoology, such as geology, palæontology, and the philosophy of the living and extinct world, is certain to reduce our knowledge of the animal kingdom to a mere terminology, alike tedious in its acquisition, and unprofitable when acquired."

The work now before us is an introduction to the science of animal life, and man's structure and physiology have been selected as by far the most interesting and the most important. It is eminently a practical work, being composed of well-ascertained facts, and of the results or deductions from oft-repeated physiological experiments, related in simple language, and in a systematic and analytical order. The dissected plates contained in the work enable the reader to overcome that difficulty which even the most acute-minded have found to be a severe task for the mental faculties, the comprehension, namely, of the anatomical and physiological co-relations of man's structure; in other words, the topography of the organs, and the physiological relations which, individually and collectively, they hold to each other.

That the work we now review is *au courant*, and even in front of the science of the day, will readily be admitted by all who read it. True to

his character as a scientific man, the author points out to his readers the great objects of anatomical and physiological research. He has selected the human structure as the best suited for his purpose, and boldly states, what cannot indeed be well contradicted, that

"systems change, and every era is characterized by a form of philosophy adapted to the then existing condition of the human mind; but the facts of anatomy, and the deductions of experimental physiology, when rigorous, remain for ever true. Without a knowledge of these facts and deductions, the general student can make no sound progress in zoology; the professional student becomes an unsafe practitioner; the palaeontologist a mere dreamer. Modern education, it is true, aims at something more than the becoming acquainted with the mere facts of science; it aims at a 'new interpretation of Nature.' None can be more sensible of this important truth in the history of modern education than the author of this work. Long retarded by adverse circumstances, the human mind, as if anxious to make up for lost time, displays everywhere an extreme anxiety to comprehend the principles of the philosophy of the organization of animal bodies; in this haste there is danger—the danger of overlooking facts, and the deductions from facts, valuable only as based on them; the danger of forgetting that the philosophy which rests not on facts, is a vain structure, liable to be overthrown by a single experiment. Palliset, the potter, demolished, by a single remark, the dreamy fancies which for centuries before his day had passed for philosophic theories. A fragment of bone, rightly interpreted, enabled the immortal Cuvier to demonstrate to mankind the truth and the consequences of Palliset's wonderful discovery. If the student, then, hopes to interpret Nature aright, his education must be based on the facts and principles contained in this little volume; their right comprehension will enable him, in the first place, to understand the true nature of those living forms which adorn the earth, which include his own structure and physiological history, and which consequently represent the grandest and most wonderful of all Nature's great designs; secondly, to comprehend the various interpretations of Nature, which the illustrious dead have offered to the thoughtful of mankind; lastly, should Genius lend her aid, to interpret the book of Nature for himself."

¶ We shall conclude our remarks on this excellent little manual, which treats of a subject often handled in this journal on the same principles, both popularly and professionally, by a single quotation from the body of the work itself; from it may be gathered the style of the author, and the way he deals with delusions, though rendered respectable by the testimony of countless centuries.

"A popular error, of countless ages of duration, has assigned to the heart functions which it has not, and cannot have; and the language of nearly all nations has consecrated this delusion. In the heart it places the passions and feelings of the mind, and a hard heart, a bad heart, a kind heart, expressed in brief terms the amount of the error which ascribed to a hollow muscular organ, insensible under ordinary circumstances, the great and noble and tender passions which ornament or dishonour humanity. But although such delusions have been long exploded, (with the scientific world,) enough of interest still attaches to this organ to render it worthy of all attention. Its mysterious, unceasing rhythmic action, hitherto unexplained; the strength and peculiar character of its muscular fibres; its supply of nerves and of nervous power from a source which seems to remove it, and does remove it, from the control of the mind or will; and the unknown ways by which, notwithstanding, it betrays the secret feelings of the soul,

becoming the tell-tale of that of which it can know nothing; the necessity which connects its motions with life—all these are points which give to its anatomy an interest second only to the brain itself."

In conclusion the work has been beautifully got up; the dissected and coloured engravings are fine specimens of the art, and are by French artists, who have carried this branch of engraving to the highest perfection; and it may conscientiously be said, that neither author nor publisher have spared labour or cost to render the work acceptable to every class of readers.

The Scalpel: an entirely original Expositor of the Laws of Health, and Abuses of Medicine and Domestic Life. Edited by EDWARD DIXON, M.D. Vol. IX., No. 3. Sherman and Co., New York; and at 85 Fleet-street, London.

WE who move in a certain groove, and imagine ourselves bound down to a certain class of topics, can hardly sympathise with the restless eclecticism of our transatlantic cousins. A definite purpose is, perhaps, one of the symptoms of advanced civilization as regards literature, whether science, art, or theology are the subjects of discussion. It would not be difficult to illustrate this truth by "modern instances," appealing to the consciousness of every one. The motto, "Ne sutor ultra crepidam," has eaten into our minds. We are special everywhere. With only a few exceptions, politicians are wholly engrossed by politics, or at any rate only speak *ex cathedra* on political questions; merchants are absorbed in merchandise: ecclesiastics in theology; and medicine, more jealous than any other vocation, though undoubtedly linked with more that is collateral, studiously denies its honours and emoluments to all who will not link themselves to medicine definitely, clearly, and with a distinct purpose. Oliver Goldsmith was no physician, because his heart was not in it. He was a poet and a *littérateur* of the first order; and there are other countrymen of his at the present time of the same kind, who stand just as much chance of living by physic as the graceful author of "The Deserted Village." Poor Goldy, in spite of his gold-headed cane and pills, was a sorry leech, and his continental tour made him, as it has made others, more gossippy than scientific.

In looking over the pages of "The Scalpel," we are particularly struck by the absence of any particularity in it. Why it should be "The Scalpel," or profess to be a medical publication at all, we cannot conceive, unless possibly the editor's name and address on the title page be the substantial cause of the existence of the journal. We strongly suspect it is so. The magazine should be entitled "The Dixonian Digest of Things in General." Then would it flourish; and all New York, reading the clever lucubrations of the distinguished editor, rush to No. 42 Fifth Avenue for advice, and then would Dr. Dixon flourish.

The repertory of articles in this journal is most heterogeneous. Of all the roving commissions an editor ever had, Dr. Dixon has the most latitudinarian. What would be thought of us if

we wrote all the way from "popery and pig-sties" to "medical hygiene in pulmonary disease?" or what would be thought of us if we wrote about "popery" at all? Here are extraordinary dainties for the intellectual palate of New York physicians and surgeons: "Poetical Products of Yale College," "Life on Shipboard," "Banking-houses—what they are and ought to be," "Mormonism," "Hotel and Wall-street Stockwindlers."

There are a few articles on medical subjects treated in the most popular *ad captandum* style. As a medical periodical, everything about it is superficial; the sociology is absurd; it abounds in vulgar jokes, and still more vulgar invective; and the attempt at literary trifles results in vapid imitations of originals, themselves too vaporous to read.

There must, of course, be better journals than this on the other side of the great Salt Lake—indeed, we know there are. This affair is a disgrace to the profession in the United States. In the Old World, a medical journal would be about medicine; in the New World, it appears to be about everything else besides medicine.

A Few Friendly Words to Young Mothers.—By ONE OF THE MATERNITY. pp. 32. London: Hatchard.

This little book is the handywork of a lady whose large personal experience and clear judgment entitle her to the confidence of those to whom it is addressed. In a few pages is condensed much practical information on points that have great interest for every young bride when she receives solemn adjuration to take care of herself. The duty of a mother to her little ones, to watch that she may ward, to see that she may know, is impressively enjoined. The characteristics of that bed-room autocrat, the monthly nurse, are neatly sketched in a manner that may rob her of a part of her terrors, and valuable hints given to the qualifications for which attendants on children should be selected.

Practical Hints on the Management of the Sick-room. By R. HALL BAKEWELL, M.D. pp. 48. London: 1857.

This little brochure should be in the hands of everyone—gentle and simple—whose province it may be to visit the sick chamber. It is extremely well written, and the author has carefully avoided trenching in any degree upon the province of the medical attendant.

Foreign Department.

DR. CHURCHILL'S TREATMENT OF PHTHISIS, BEFORE THE ACADEMY OF MEDICINE OF PARIS.

DR. CHURCHILL (who lately endeavoured to institute experiments at the Consumption Hospital, Brompton) read before the Academy of Medicine of Paris, on July 21st, 1856, a paper on the Immediate Cause of, and on a Specific Remedy for, Pulmonary Consumption. The summing-up runs as follows:—

"In June, 1856, the Academy did me the honour of accepting sealed papers, in which were contained my first ideas respecting the specific treatment of the tubercular diathesis. I was at that period anxious to collect a greater number of facts illustrating my discovery; but ill-health obliged me to suspend my labours, and the results which I now bring forward are much less numerous than I could have wished. I have treated in all 35 cases of phthisis, both in the second and third stage—viz., with softening tubercles, or with vomicae. Out of that number, 9 recovered; with 8, the physical signs disappeared; 11 were much improved; 14 died; and 1 is now under treatment.

"From these facts, and the views contained in my paper, I may frame the following statements:—

"The immediate cause of tuberculosis, or at least an essential adjunct of it, is the decrease in the organism of the phosphorus which therein exists in a state capable of oxydation.

"The specific remedy of this complaint consists in the employment of a preparation of phosphorus which presents two characters—the first, of being fit for immediate assimilation; and the second, to be at the same time in the lowest possible state of oxydation. The hypophosphites of soda and lime are the salts which have hitherto presented these two characters in the most complete manner. Either of these salts, administered in doses varying from ten to forty-five grains per diem, may be used in the treatment of phthisis. The highest dose which I have given to adults has been fifteen grains a day.

"These preparations have a direct action on the tubercular diathesis, and dispel with a really wonderful rapidity all the symptoms which characterize the disease. When the morbid deposit which is the special result of the dyscrasia is recent, when the softening is only incipient, and does not take place too rapidly, the tubercles are removed by absorption, and disappear without leaving any trace. When the deposit is of older date, and the softening has reached a somewhat high degree, the breaking-down process may continue in spite of the treatment, and the issue of the case will depend on the pathological peculiarities of the lesion, on its extent, and especially on the presence or absence of complications. I have made numerous attempts to modify the local mischief by means of inhalations of several substances, but I have obtained no favourable results, except such as were owing to the general treatment.

"The physiological effects which I have observed during the administration of the phosphites of soda, lime, potash, and ammonia, prove that these salts have a double action. On the one hand, they immediately increase the principle (whichever it may be) which constitutes nervous power; and they present us, on the other hand, very efficient blood-generating agents far superior to any hitherto known. These preparations possess in the highest degree all the therapeutical properties attributed by former observers to phos-

phorus, and are devoid of the dangers which have almost consigned this substance to oblivion. It cannot be doubted but that hypophosphorous preparations will henceforth rank foremost in therapeutics."

ETHER *versus* CHLOROFORM.

PROFESSOR BARRIER, of Lyons, has published in the *Gazette Médicale de Lyon*, August 15th, 1857, an able article, wherein he contends that ether should be used in preference to chloroform as an anæsthetic. He concludes by propounding the following opinions:—

"1. When death is instantaneous, it must be the result of an idiosyncrasy which contributes in rendering the prostration of the nervous system more rapid and complete; hence fatal syncope.

2. As ether acts less powerfully and quickly than chloroform, it exposes patients less frequently to that instantaneous prostration.

3. If asphyxia can be looked upon as one of the causes of death under anæsthetics, it may be easily prevented, when it arises from an imperfect mode of inhalation, which does not allow a sufficient amount of air to enter the chest.

4. If death, on the other hand, is the consequence of protracted anæsthesia, the latter is of course the more dangerous in proportion to the rapidity of action of the anæsthetic agent.

5. Ether is to be preferred to chloroform, because it is less dangerous, and that the few disadvantages attributed to that agent, are of too secondary a character to cause its use to be given up in operative surgery."

That the data as to the number of deaths by chloroform must be very incomplete, is proved by a fact stated in the above-mentioned article. M. Barrier states that five deaths from inhalations of chloroform have to his knowledge taken place at Lyons, and that *one* only has been published.

RESULTS OF THE OPERATIONS OF TRACHEOTOMY PERFORMED FOR CROUP AT THE CHILDREN'S HOSPITAL, PARIS, DURING THE YEAR 1856.

We find in the *Bulletin de Thérapeutique* (May 30th, 1857,) an extremely instructive table respecting tracheotomy in croup, taken from the thesis of M. André, late house-physician (interne) of the Children's Hospital:—

AGE.	No. OF PATIENTS.	DEATHS.		RECOVERIES.	
		Boys.	Girls.	Boys.	Girls.
From 15 months to 2 years.	6	2	4	0	0
" 2 years to 3 years.	9	4	3	2	0
" 3 " 4 " ...	18	5	4	4	0
" 4 " 5 " ...	11	6	3	1	1
" 5 " 6 " ...	6	3	1	1	1
" 6 " 6½ " ...	3	1	1	0	1
" 7 years.....	2	0	1	0	1
" 8 "	2	0	1	1	0
" 9 "	1	0	0	1	0
" 9½ "	1	0	0	0	1

From this table it appears that many successful cases of tracheotomy have been observed, as nearly one-third of the patients recovered. The most notable success has been obtained with children from nine to nine years and a half old, and then with those children who were from five to six years old. The least satisfactory results were observed from fifteen months to two years, for here we have six operations and six deaths. All the children under two years are to be found in the column of deaths; and all those who died, except two, were just a little more than two years old. M. André thinks that these facts may be explained by the greater amount of resistance with the older children, both as regards the disease and the operation. He also conceives that debilitating means, as leeches, blisters, &c., should be sparingly used so as to husband the strength for tracheotomy.

THE INVENTOR OF THE GUILLOTINE.

M. GEMILLE lately sent a paper to the Société Médicale d'Emulation de Paris, on Pain. In this paper Dr. Guillotin, the supposed inventor of the guillotine, is alluded to as having rendered good service to humanity in annihilating pain in capital punishment.

It would, however, appear that this invention, which at one time brought some odium upon Guillotin, does not in fact belong to him. M. Baierre de Boismont, a member of the above-named Society, contended that the death-engine was known in Italy long before Guillotin's time. M. Larrey stated, moreover, that it was at one period called "Louisette," from having been reported upon to a committee by Louis, the celebrated surgeon. M. Caffé, also a member, added that the actual share of Guillotin in the contrivance was his proposing to add a heavy hammer to the knife, which former should strike the head at the time of the descent of the latter, so as to prevent pain by stunning. M. Caffé further mentioned that the invention could be traced as far back as 1600, when a member of the Montmorency family was beheaded by means of the machine alluded to.

We have, however, a somewhat different opinion from M. Lallemand, who said, at the same meeting, that both he and M. Perrin had seen the numbers of the *Moniteur* containing the minutes of the committee appointed by the "Constituent Assembly" to report on Guillotin's invention. The members of this committee made experiments on dead bodies and on animals, and the report of their proceedings was confided to Louis. It is said that it was the unfortunate Louis XVI. himself who advised the edge of the knife to be made slanting.

ON THE MECHANISM OF THE ACTION OF THE HEART.

M. CHAUVEAU has sent to the Academy of Sciences of Paris a paper on the vexed question of the action of the heart.

The author discusses the opinion of Dr. Hiffelsheim, who contends, in a late memoir addressed to the same Academy, that that action is the effect of a backward motion produced during systole. M. Chauveau then gives an account of his experiments, and concludes thus:—"What is then, finally, the true mechanism of the heart's action? Among the mammalia it is due to the sudden increase of the transverse diameter of the organ during ventricular systole."

The observation of a great many animals has shown to the author, 1st, that during ventricular systole the heart becomes flaccid, and appears energetically compressed from side to side; 2nd, that the ventricles, during their systole, undergo shortening along their longitudinal and antero-posterior diameters; whilst there is increase in the direction of the lateral diameter. As this increase takes place suddenly, and with an energy capable of overcoming considerable weight, it must produce a powerful action, especially in the left heart, owing to the great strength of the left ventricle, which latter is, besides, less covered by lung than the right.

The mechanism is the same in man, with such differences as result from the peculiar conformation of his heart and chest. Hence the author holds that, with human beings, the action of the heart is due to the sudden increase of the antero-posterior diameter of the ventricles.

QUACKERY IN THE MANUFACTURING DISTRICTS.

THERE is no profession so grievously afflicted with the evil of over-competition as that of medicine. We who are curators of the body are infinitely more numerous than they who are curators of the soul. Lawyers, though "thick as leaves in Vallombrosa," are of a rarity quite refreshing to the eye of an ambitious physician or a pining surgeon. In short, look where we may, there is an opening everywhere except in physic, and there there are only a few crevices which everyone is struggling to cram himself into. But such an evil as over-competition amongst members of the profession, when carried on by no dishonourable means, and when it is the result merely of numbers, and merit *versus* merit, can be borne with equanimity, or something like it; the consciousness that our opponent is as good as ourselves—as well educated, as well proven, as worthy of trust—is, after all, an alleviation of our discomfort. And by the help of such considerations we can be philosophical, bow to our rival, envy him not his success, be not over vexed at our own impecuniosity, and, in fine, be the very best of friends.

But it is very far different when we find ourselves competed with by a set of low, uneducated fellows who, even as DOMINIE SAMPSON was called a "steekit minister," might be called "steekit doctors." It is a crying shame that there should be a number of persons practising physic and

surgery side by side with us, who have no qualification beyond an unfinished apprenticeship, and an abortive course or two of lectures. Such persons exist in numbers which would surprise those less conversant with the real state of the case than ourselves. Hanging about the suburbs of town, infesting its central parts, and acting ostensibly as druggists, these people absorb much money and destroy many lives and much health. But the north is the favoured habitat of such individuals; and more especially the manufacturing districts of Lancashire and Yorkshire. Many a "surgeon" there is no surgeon at all, and many a Dr. is self-dubbed. The peculiar nature of the population in the cotton districts is very favourable to the existence of such depredators as these we allude to. Large towns consist almost entirely of operatives who look upon physic as a trade—and a poor one too,—who have not the ability to form any opinion as to the proficiency of their betters in point of general education—who rather like some one of their own class—who have a strong belief in a natural gift for doctoring, and, above all, believe most fervently in cheap physic, cheap advice, and cheap visits.

These remarks are of course not without a special object. At this moment we refer to a town in Lancashire, whose inhabitants amount to thousands, and amongst whom an impudent quack boldly flourishes. This individual has a brass-plate on his door, with his name, and the title of "surgeon." He practises physic, surgery, and midwifery, without let or hindrance. He has no qualification whatever. It is said that he has served an apprenticeship, but it is also said that he did not, for some cause best known to himself and his master, serve his whole time. Be this as it may, this person has obtained no diploma, and has given no guarantee to the public that he is competent to perform the duties he has undertaken.

As might be expected, this pretender undersells the qualified practitioner of the place, a gentleman who, in addition to the double qualification, is a Doctor of Medicine of Edinburgh. The legitimate practitioner is undermined by an illegitimate one, who, in order to recommend himself to the operatives and their families, does everything at half price. What other arts may be resorted to, in order to procure the patronage of the inhabitants, it is unnecessary to inquire; there is the broad fact that a man who is a "steekit doctor" is obtruding himself into the position which properly belongs only to one who has proved himself before competent authorities to be a good man and true. If the disasters which must necessarily attend the practice of such an individual would in time deter people from entrusting their lives and health to his keeping, there would be the gratification of feeling, that with a certain amount of rope he must eventually achieve a nameless result. But some people appear proof against any amount of evidence of incompetency. Moreover, we are sorry to hear that a medical practitioner from a neighbouring

town takes the responsibility of all the quack's bad cases, and signs all his death certificates. This certainly is most suicidal. We should at least be true to each other.

The defence set up by persons of the pretender's type is, that medicine is a trade, and trade should be free. But the question is not a trade question, but one of morals. Skill and cotton are not of the same nature, and cannot be used, transferred, and dealt with upon the same principles. He who professes to exercise a special function, involving the spiritual, bodily, or property interests of mankind, is bound to produce to society proof of his fitness to exercise that function. If he fail to do so, it is a natural inference that either he is dishonest in his purposes, grossly ignorant, or both ignorant and dishonest. There is no real obstacle in the way of any man, having the most ordinary abilities, who desires to become a qualified member of the profession. Medical education is tolerably cheap, and there are examining bodies whose standard is attainable by any one. The facilities indeed are abundant, so abundant that the conduct of any one who practises medicine or surgery without a diploma is absolutely inexcusable. The patients of the quack ought to know that he cannot recover his charges. If he finds himself unpaid, he may possibly abandon his present illegal occupation, and, in exchange for it, pursue some honest trade.

THE SUSPECTED MURDER.

By a concurrence of circumstances that might well cause the most careless to pause and think, there has, apparently, just been brought to light the evidence of an atrocious murder. A carpet-bag, containing portions of the remains of a human being, was carried on to the north end of Waterloo-bridge, at half-past eleven o'clock last Friday night, to be got rid of by letting the bag and its contents quietly down into the water by means of a cord. This bridge and this hour were undoubtedly selected because a person carrying a heavy bag could then cross without suspicion, since a train started from the terminus of the South Western Railway at a quarter to twelve o'clock. The bag was to be let down into the water, lest the splash occasioned by its being thrown over the parapet should be heard by watchmen listening for the sounds which too often give notice that "one more unfortunate, weary of breath," has sought refuge in a watery grave. From one of the recesses of the bridge the bag was carefully lowered until the strain was no longer felt, and then the cord by which it had been guided was also allowed to fall. But this very excess of caution defeated the iniquitous object. From one small portion only of the parapet of the recess could the weight have been so let down that it would alight on a shelving abutment of the bridge, a short distance above the level of the water. This one spot was that from

which the bag was lowered; and the care with which the revolting burden was let down enabled it to rest on this shelving abutment, from which it would certainly have slid if allowed to fall rapidly or with a jerk.

The bag contained a portion of the bones of a man about five feet eight inches in height. The parts deficient were those by which identification could be established with greatest certainty, namely, the hands, feet, and head. In the bag were five lower dorsal vertebrae, separated by the division of the cartilages with a knife, and by cutting the processes with a saw. Considerable force had been employed, as a portion of the spinal cord had been dragged out of the canal of the upper dorsal vertebrae. The pelvic bones, larger than those of the male usually are, had been separated with laborious care. Attached to the pubes on one side was found a small portion of the corpus cavernosum, thus placing the sex beyond dispute. The left elbow and right knee had been bent at right angles when the body stiffened, and this was the condition in which it was found; the division of the femora having been effected by sawing through their shafts below the trochanters and also above the condyles. One upper extremity had been removed by sawing through the neck of the scapula. The sternum had been split by a vertical section. On all the bones remained fragments of muscle, which had been evidently roughly hacked away. The knife used was a blunt one, but the saw sharp.

We particularly mention these appearances, as they serve to refute a foolish rumour which was spread on the first discovery of the remains, that they had been deposited by some medical students for a "hoax." Such an absurd suspicion could only have originated in the densest ignorance. Students have no greater opportunities of obtaining possession of remains in the condition these were found than any other members of society, and we can only express our extreme disgust at the morbid obtuseness of the slanderer who dared to impute such a barbarous outrage to intelligent and educated men.

There was skin adherent to four parts of the remains—on the back of each wrist, on the tubercle of the right tibia, and over the left side of the sternum about its middle. In this latter situation there also remained a portion of the origin of the pectoralis, perforated by a stab, which was apparently inflicted during life, and penetrated between the third and fourth ribs. Now, the clothes had also been thrust into the carpet-bag, and in the left side of the shirt-front were marks of seven or eight stabs made by a thin clean blade, one of the holes precisely corresponding with the above-mentioned incision. Had this small remaining fragment of flesh been removed, there would have been lost the most presumptive evidence of murder. Had the fragments not been by some means preserved, decomposition would have rendered it impossible to decide that this stab was inflicted previous to death. The clothes are perforated by many stabs, and

have evidently been roughly cut and torn from the stiffened body.

The parts of the body deficient, including the viscera and muscles, form a mass so difficult to appropriate, that the detection of the murderers may occur even whilst these observations are passing through the press. That more than one person was concerned seems probable. And there were found entangled amongst the remains long, fine, brown hairs, which lead to the suspicion that a woman, with her hair dishevelled, was present when the body was hewn to pieces.

We cannot enter into further details on this subject at the present time, for obvious reasons; but the points already indicated are of such professional interest that we need not apologize for commenting on them. It only remains that we should direct attention to the minute care and the great professional skill and intelligence with which the remains have been examined by the police surgeon, Mr. R. B. PAINTER, of Brydges-street.

(LETTER FROM MR. RICHARD BUDD PAINTER,
SURGEON TO THE F DIVISION OF THE METRO-
POLITAN POLICE FORCE.)

To the Editor of THE LANCET.

SIR,—As I find there is still an opinion held by a few medical gentlemen, as well as by some of the public, that the bones recently found at Waterloo-bridge are not those of a murdered man, but the remains of a dissection, I think it may be well to send you a short account of what I have observed hitherto in the matter, especially as I am the only medical practitioner that has yet reported on the case. I therefore propose, on the present occasion, to give a short anatomical description of the case, and will possibly, at a future period, give a more detailed account.

On being shown the bones at the Police-station, I proceeded to fit them together, and soon ascertained that they all belonged to one person—an adult man of an average, or perhaps above the general size. The head, the whole of the viscera, all the cervical and seven of the dorsal vertebræ, were wanting, also the left clavicle, portions of the ribs, acromion process of the right scapula, both hands, both patellæ, lower third of the left fibula, and both feet and tarsi. Of the bones present, five dorsal and two lumbar were in one piece, the ribs being sawn from the former. The upper and lower portion of this piece of the backbone was separated from its adjoining bones by cutting the intervertebral substance with a knife, and the articular and transverse processes with a saw. The lower lumbar were cut in half through their bodies and attached to the pelvis. There were five portions of the thorax, three of them belonging to the right side, and forming, when put together, eleven ribs nearly complete; the two other portions were from the left side, one of which consisted of probably the second, third, and fourth ribs, with part of the sternum. Between the third and

fourth ribs, near the sternum, was a cleanly-cut stab, having its long axis upwards and downwards, and exactly corresponding with the direction and position of the cuts in the coat and under-waistcoat. Around this wound, for a distance of two inches, blood was infiltrated into the tissues both external to the thorax as well as beneath the pleura. The next ribs below, probably two or three, were missing, the other piece of the left side above-mentioned being most likely parts of the seventh, eighth, and ninth. Thus the ribs immediately beneath the parts where the greater number of stabs in the clothes appear are missing. But the characters of the cut above-mentioned are quite conclusive as to the wound being inflicted during life. The thorax had not been opened in the invariable (as I believe) manner of anatomists—viz., by cutting the costal cartilages, but the sternum was sawn down the middle vertically. The right clavicle was left hanging to the upper rib, and had a square inch of dark skin on it. The right scapula was detached, and had lost its acromion by the saw, and was roughly disarticulated from the humerus. The right radius and ulna were in one piece, but separated by rough disarticulation from the humerus and hand. The left scapula was also separate, but sawn from the humerus, to which the neck remained attached. At the elbow-joint the heads of the left radius and ulna, partly sawn and partly broken off by great force, were also attached to the humerus. The remaining portions of radius and ulna were together, and pronated. On the back of each wrist was a large patch of dark skin, with numerous long, black, or darkish hairs.

The pelvis was divided with a knife (I believe) at the symphysis pubis, and with a saw down the centre of the sacrum. It was of large dimensions, the internal measurements being at the brim five inches lateral, and four inches and a quarter antero-posterior. Attached to one of the rami was a distinct portion of the corpus cavernosum. The heads of both femora were articulated, but sawn from their shafts below the trochanters. The right stump had muscle around it, and was firmly fixed, pointing almost at right angles to the body of deceased. The capsular ligament of the left hip-joint was cut open, and an endeavour had been made to wrench out the head of the femur, but it was held by the ligamentum teres. The shafts of the femora were again cut just above the condyles, the right lower portion still remaining attached to the tibia. The left was separated and detached by rough cutting. The right tibia was cut at the junction of its lower third. The right fibula was similarly divided and detached. The left tibia and fibula were similarly sawn. The lower portions of the right tibia and fibula and the left tibia formed separate fragments, and were disarticulated from the missing tarsi. The right knee was strongly flexed, and had a large piece of skin with hair, as on the wrists, firmly adherent to the head of the tibia.

All the bones had portions of muscles, nerves, arteries (uninjected), &c., adhering, cut about in a rough, "haggled" manner, and had not been dissected. The colour of the parts was reddish-brown externally, redder if cut into. No decomposition had taken place, excepting in the left acetabulum, where there were blue discolorations, and a very strong smell of putrefaction. No portions of skin were present but those named. From the condition of the tendons, arteries, cuticle, &c., I should not wonder if the parts had been boiled.

It is evident that when cadaverous rigidity set in, the right thigh and leg were strongly drawn upwards and outwards, the latter partly flexed on the former. The left humerus must have been abducted from the side, and the forearm half flexed and pronated at the same time.

Some dark hairs were adherent to the remains, and also a few long ones of a lighter colour. Some saline gritty particles were found on the muscles, &c. These will probably be analyzed.

I think I have said enough in this hurried note to show that a foul murder has been committed. I have not time to add more, or speak of the clothes, and my chief object in writing this at all, is to endeavour to free my medical brethren from the horrible imputation that they dispose of their subjects, used for study, in such a manner as this.

I am, Sir, your obedient servant,

RICHARD BUDD PAINTER, M.R.C.S.

Brydges-street, Covent-garden, Oct. 15th, 1857.

ROBERT KEATE, ESQ., F.D.C.S., SERJEANT-SURGEON TO THE QUEEN.

MR. ROBERT KEATE was born on the 14th of March, 1777, at Laverton, Somersetshire. He was the fourth son of the Rev. William Keate, D.D., rector of that parish, and a prebendary of Wells. An elder son was the late Dr. Keate, headmaster of Eton College, and canon of Windsor. He received his early education at the grammar school of Bath, where he remained till 1792, in which year he was removed to London, and apprenticed to his uncle, Mr. Thomas Keate, at this time surgeon-general to the army, and one of the surgeons of St. George's Hospital.

In April, 1793, he was admitted a pupil of St. George's Hospital. In the wards of this hospital, under the tuition of J. Gunning, John Hunter, William Walker, and his uncle, Thomas Keate, and at Chelsea Hospital, (where he was appointed "hospital mate" in 1794,) Mr. Keate laid the foundation of that practical acquaintance with disease, and acquired that dexterity of hand, for which in after life he was so much distinguished.

In May, 1798, he was admitted a member of the Royal College of Surgeons of England, and appointed staff-surgeon in the army. In August of the same year, he was intrusted with the care of H.R.H. the Princess Amelia, then an invalid at Worthing.

In the following year he was second surgeon to Queen Charlotte, and so great was the confidence

felt by the royal family in Mr. Keate at this early period of his career, that in the autumn of this year (1799) George IV., then Prince of Wales, who was visiting their Majesties at Weymouth, took his infant daughter, the Princess Charlotte, from Lady Elgin, and placed her in the arms of Mr. Keate, charging him in the most gracious and complimentary terms to study her constitution and watch over her health.

From this period, Mr. Keate was in frequent attendance upon all the members of the royal family, with the exception of the Duke of Sussex. He was personal surgeon to King William IV. and Queen Adelaide; and in 1841, upon the death of Sir Astley Cooper, he was appointed serjeant-surgeon to her present Majesty. The last professional visit he ever paid was to H.R.H. the late Duchess of Gloucester.

In 1800, Mr. Keate was elected assistant-surgeon, and in 1814 surgeon, at St. George's Hospital, which appointment he held till 1853, when ill-health compelled him to resign. Sir Benjamin Brodie, in an address to the pupils of St. George's, at the distribution of prizes in this year, after alluding to some of the illustrious dead who had adorned this hospital, thus speaks of his former colleague:—

"One individual, however, who was assistant-surgeon when I was yet a pupil, and who was my colleague afterwards, still remains among us. During the term of thirty-two years, Mr. Keate and myself laboured together, and I may, I believe, affirm, that not only no unkind word, but that scarcely even an unkind thought, ever passed between us. It is not for me to determine how far we were successful, but I may say, that we were alike anxious, and neither of us more than the other, to render the hospital more efficient, both as a receptacle for the sick and as a medical school. You must excuse me if I take this opportunity of expressing how much I am myself indebted to the example Mr. Keate has afforded me of an accomplished surgeon, and a man of integrity and a gentleman. Nor are these observations irrelevant to the present occasion, as I am thus enabled to point out to the younger members of our profession by what rules they should shape their course, if they would enjoy the respect and esteem of others as they advance in life."

During the war with France, Mr. Keate was much employed in various official situations connected with the medical department of the army, and in 1807 he attained the rank of inspector-general of hospitals. He was an active member of the Royal College of Surgeons for many years as a member of the Council and Board of Examiners, and thrice filled the office of president.

In the long course of his professional life, Mr. Keate, by his courteous manners and uprightness of conduct, obtained the respect and regard of all who came in contact with him, in public and in private; and it is very gratifying to his family to have been favoured, by a most competent judge, with the following testimony to his surgical skill and integrity of character:—

"There were few forms of disease with which Mr. Keate was not familiar, and he was ready and skilful in the application of remedies. As an operator he has never been surpassed. Neat and accurate in the use of his hands, he was at the same time prepared for whatever might happen, and never lost his presence of mind and self-command. There was also this great excellence in him, that it was plain to every one that he thought of nothing but doing the best that could be done for the patient. There was no attempt at display, nor the smallest appearance of his troubling himself as to what others thought. But Mr. Keate had other qualities which made him a useful example to the profession. He was thoroughly honest, and a thorough gentleman. No one knew him to have been guilty of an unkind or illiberal act, either towards his patients or any one else. He was entirely free from vanity and self-conceit; he assumed nothing that did not belong to him. If he had any fault in this respect, it was that he rather under-estimated his own merits."

Mr. Keate was married to Isabella Ann, youngest daughter of H. Ramus, Esq., H.E.I.C.S., by whom he has left two sons and four daughters. His eldest son, Robert, is now Governor of Trinidad, West Indies.

Mr. Keate, we believe, attended personally on four sovereigns. It is doubtful, however, whether his illustrious patients were in reality a source of much emolument to him. We have heard him say, that the great amount of time which he had to devote to them seriously interfered with his other practice, at that time most extensive and lucrative. Mr. Keate was a great favourite with his late Majesty William IV., who, doubtless, admired the fine independent spirit which was so characteristic of the man.

There is an anecdote connected with his attendance on the late sovereign which is so honourable to him that we think it desirable to place it on record. Queen Adelaide, on one occasion, had a strong desire to take the advice of a homœopath. The king was opposed to the proceeding, more particularly as Mr. Keate resolutely refused to meet any person, who practised so irregularly, in consultation. It was eventually arranged, however, that the homœopath was to be admitted to see the queen, and he accordingly made his way up a back staircase to royalty; but the king imposed the condition that Mr. Keate should be consulted afterwards to see that no harm was likely to result from the medicine ordered. The homœopath having prescribed and taken his departure, the prescription was brought by the King to Mr. Keate. "Here, Keate," said his Majesty, "look at this: is there any fear of the Queen taking the medicine ordered? I strongly dislike the humbug; but should wish to humour her whim if it can be done with safety." Mr. Keate here explained that the "medicine" could not possibly injure the royal patient, inasmuch as that if she took the dose ordered every hour for forty years successively she would have swallowed

less than an ordinary dose of the medicine. "I always thought this homœopathy d—d humbug, and this convinces me that it is so," said his Majesty, laughing heartily. "Well, Keate, it is clear that the 'physic' can do her no harm, so she had better have it." It would be well if some men in high position in our profession at the present day would take a lesson from the noble conduct displayed by Mr. Keate on that occasion.

MASSACRED, at Cawnpore, with his two children, Arthur Wellesley R. Newenham, Esq., surgeon H.E.I.Co.'s Service, 1st Bengal N.I., aged 44. His wife, Charlotte, (youngest daughter of General Kennedy, C.B.,) died of fever at Cawnpore, before the massacre, between the 27th of June, when the treacherous embarkation of the women and children in the boats took place, and the 15th of July, the day of general slaughter by Nena Sahib of the survivors. Dr. Newenham was a native of Ireland, an M.D. of Heidelberg University, where he studied about five years, the required period, under Tiedemann, Chelius, Bischoff, Naëgelé, and other distinguished professors. In April, 1842, he passed the examination of the College of Surgeons, London, and soon afterwards set sail for India. He had only a few months previously to his sad death, been removed to Cawnpore, and at the same time promoted to his full surgeoncy. Dr. Newenham was an agreeable companion, of exemplary character, thoroughly well informed in his profession, and one in whom the Company has lost an estimable and active medical officer.

HORSE-FLESH AS FOOD FOR MAN.

To the Editor of THE LANCET.

SIR,—Considerable interesting discussion having recently taken place in France, respecting the flesh of horses as an useful article for human consumption, and perceiving the *Veterinaria* of September last alludes to its public sale in several licensed shops at Altona, permit me to state briefly, in confirmation of the remarks made there as elsewhere, that during my late excursion in Denmark, I found the dead denizens of stables supply a very important portion of the ordinary rations distributed to prisoners throughout the gaols of that country.

For example, in the chief central prison of Copenhagen, which contained altogether at the period of my inspection many hundred male and female inmates, then undergoing different terms of punishment, horse-flesh is regularly served four times a week, and forms almost the only animal food they receive, with the exception of pork occasionally, or herrings on other days. In fact, it is a principal item in their nutriment; and judging from the hale appearance of numerous individuals I examined, at the time under confinement, the horse flesh used must have agreed with their physical frames; while authorities belonging to the establishment replied to my special inquiries, that the nitrogenous diet above designated

proved salubrious, and was not considered at all objectionable.

Desirous of forming my own opinion regarding the meat and soup which were being cooked in the kitchen cauldron, I partook of each purposely, when the former tasted very like coarse beef, yet by no means unpleasantly; and the latter, although far from constituting an agreeable product, was not unpalatable. Indeed, it may be even added, by way of illustration, had I not known previously what kind of edibles were actually preparing for the prison refectory, perhaps the circumstances now briefly described might have been overlooked, but which virtually, according to present English notions and customs, will still appear to some persons rather extraordinary. However, when such sceptics learn that no horse-flesh is permitted to be sold publicly, or even sent to any prison, without being first examined by properly-qualified officials,—appointed by the Veterinary College, and whose certificate is imperative,—the dietary just mentioned may not be thought in reality so singular or injurious to the health of partakers as heretofore generally believed. At all events, experience, in the Danish islands, Holstein, as also in some districts of northern Germany, speaks favourably of *hippophagy*. Again, the Kirghi and most Tartar tribes frequently eat horse-flesh, although, curious enough, the Calmucks are said never to taste swine or poultry! while smoked equine hams and roasted colt's haunches are always esteemed by the former as choice, savoury delicacies, and luxurious feeding; at the same time that the fermented milk of mares furnishes their greatly-prized intoxicating beverage, called "koumiss."

Prejudice and previous habits would, no doubt, act as powerful obstacles if any attempt were made to introduce the animal food in question as a substitute for beef and mutton, or even as an addition to other articles of that sort now consumed in most parts of Europe; nevertheless, the facts narrated in reference to horse-flesh should at least show the subject here mooted merits further investigation.

I am, Sir, yours, &c.,

JOHN WEBSTER, M.D.

Brook-street, October, 1857.

"Andi alteram partem."

MR. SYME ON AMPUTATION AT THE ANKLE-JOINT.

To the Editor of THE LANCET.

SIR,—Fifteen years ago I proposed a mode of affording relief from diseases that had been held to require amputation of the leg, by removal of the foot at the ankle-joint. This proposal was favourably received, and has long since been adopted by intelligent surgeons both at home and abroad as the established procedure in cases proper for its performance. It is easily executed, and proves in the highest degree satisfactory, if done in accordance with certain principles which

have been carefully explained, but it is difficult and disastrous if performed incorrectly.

In lately reviewing a book on Surgery, you quoted the opinion of the author that this operation should be abandoned, on account of the stump having been found unsatisfactory. Now, I have no desire to enter into controversy with that person on any subject whatever, as, indeed, the position in which he has placed himself with regard to me precludes even the mention of his name on my part. But as you, the editor of a medical journal, have thought proper to publish the opinion of this individual as a guide for the profession, I trust you will permit me to request the correction of a practical error, which would, no doubt, ultimately yield to the force of truth, but, in the meantime, if not contradicted, might occasion much unnecessary suffering. I therefore beg that you will communicate to your readers the following evidence, which will be sufficient to satisfy all who are capable of being convinced that the stump afforded by amputation at the ankle-joint, when properly performed, is eminently and lastingly serviceable. The duty of a good surgeon is to discover his errors so as to avoid them, and not to parade their bad results as a reason for relinquishing beneficial treatment. It appears from a published report (Dr. James Arnott, November, 1856,) that the proportion of deaths after operations for stone on adults in King's College Hospital is *two in three* cases; but this melancholy result would surely be no good ground for the general abandonment of lithotomy.

I am, Sir, your obedient servant,

JAMES SYME.

Rutland-street, Edinburgh, Oct. 1857.

(From MR. ROBSON, Head Master of the Edinburgh Western Institution, to MR. SYME.)

130, George-street, Edinburgh, Oct. 28th, 1857.

DEAR SIR,—It is now ten years since you so successfully performed your ankle-joint operation on my left foot, and I have very great pleasure in now stating a few facts relative to my experience of it.

The operation was performed under the influence of ether, chloroform being then unknown, and without the least pain to me. Within seven weeks I was able to be removed to the country, and in five weeks more I was at my duties as Head Master of the Local Day School Institution, Young-street. My duties there were onerous, having to be on my feet from nine A.M. to three P.M., and having to move about through the rooms of the institution during the day. I did this daily for three years after the operation, without the least inconvenience.

In the autumn of 1851, I visited Holland, Belgium, and the Rhine, during a great portion of which tour I travelled on foot, with my knapsack on my back, with the greatest ease. My walks varied from eight to ten and sixteen miles, as circumstances required.

From 1850 to 1854, I was a Master in the Circus-place School, where I had to stand every day from nine A.M. to three P.M. In addition to this, I walked two miles, from eleven to twelve o'clock, and three miles at three o'clock.

From 1854 to the present time, my duties have been heavier still, for in addition to standing six hours daily in the institution, and visiting eight rooms, situated on three different floors, I have walked up and down the grounds of Canon Mills House for hours daily with my boarders, and frequently played at cricket with them. I have just returned from a tour in the Highlands, a great part of which I have performed on foot, with comfort and pleasure to myself. When I mention that I am upwards of thirteen stone, and that I walked through the Duke of Athol's grounds at Dunkeld, said to be thirty miles in extent, climbed up to the falls, and ascended various hills, including Ben Ledi, it will be apparent to every person that the operation is a most useful and satisfactory one. The fact is, the more I use my heel, the stronger it seems to become. My duties for the last ten years have led me to stand and walk more and more every year, but I have always felt more and more able to do so.

From 1847 to the present time, the foot has never troubled me in the least, and my general health has been excellent.

I might have said much more, but these facts speak for themselves. I cannot, however, help noticing the superiority of this operation as regards mere appearances, which is of great importance to professional persons. I have had some thousands of pupils since 1847, and I am certain that not one of them knew the extent of the operation, so easily can I move about the room and go up and down the stairs.

I may mention, that I still wear the leather case and boot, of which you have a pattern.

With a most grateful sense of your professional skill, and of your kindness for many years past,

I am, dear Sir, your most obedient servant,
(Signed) THOMAS C. ROBSON.

To Professor Syme.

(Letter from Dr. GEORGE WILSON, Professor of Technology in the University of Edinburgh, to Mr. SYME.)

Edinburgh, October 20th, 1857.

MY DEAR MR. SYME,—You ask me whether the stump of the limb you amputated through the ankle-joint fourteen years ago is still serviceable for painless locomotion, and I can only reply emphatically in the affirmative. Since the period when the stump finally healed, and my general health improved sufficiently to allow me to walk in the open air—i. e., for some thirteen years, I have been free from all suffering in the mutilated limb. Chronic pulmonary affections and liability to dyspnoea set limits to my pedestrian achievements, and I do not willingly climb long stairs, or ascend other considerable heights; but my lame-

ness does not prevent me scaling these when occasion demands, and I am in the habit of standing for hours daily without pain at the time or subsequent inconvenience. I am thinner now than I was some years ago, and the maimed limb has shared in the emaciation; but the residue of the lost foot is still firm and elastic, and sustains the weight of the body as well as before.

I do not know what more I should add to answer your question; but it may perhaps show what power of locomotion I possess, if I mention that I have within the last four years climbed Nelson's Monument to study the time-ball, and that last autumn I visited various of the wool and cotton mills, the print works, and the large establishments in the south and west of Scotland, and was on foot for four hours on an average continuously at each visit, and under the necessity of ascending and descending endless stairs, and traversing galleries, which seemed equally endless. This summer I spent nearly a fortnight in the museums of London, a week at the Art Treasures Exhibition at Manchester, and nine days at the meeting of the British Association, and in the museums of Dublin. I was sometimes on foot for six successive hours, but though often sufficiently tired at the close of the day, had no pain in the weaker limb, and continued this work for a week at a time without intermission.

At present, as for years, I walk along the carpeted floor of my dressing-room night and morning with bare limbs, and without any stick or support. I can throw my whole weight on the naked stump, and stamp with it on the floor. In truth, I often forget that I have lost a foot, and especially, when lying in bed, wonder on putting down my hand to find no toes.

I remain yours very truly,
(Signed) GEORGE WILSON.

Professor Syme.

(Letter from the late Mr. ARCHIBSON, of Dunbar, to Mr. SYME.)

MY DEAR SIR,—It gave me great pleasure to hear by yours of the 2nd inst., that the boy Fargle's case is likely to terminate so satisfactorily.

I sent for the boy Wood, whose life was spared by a similar operation, executed by you two or three years ago, (September, 1842, aged sixteen). I examined most carefully the stump, which was all sound. He had had a renewal of the false foot since he has seen you. He told me he had suffered no inconvenience from the stump, or the slightest tenderness. He has become a country tailor, and has often ten and fifteen miles a day to go to his work; still he feels no discomfort. He says, he, with a few of his young comrades, ran off to see the operations of the North British Railway at Penmanshiel Tunnel, and must have walked fully thirty to thirty-five miles, without feeling his amputated limb.

You may rely upon it, nothing can be more satisfactory than this case of the boy Wood; and if Fargle's and all similar cases prove, under your

hands, as successful, amputation at the ankle-joint will prove the greatest blessing to the human race, especially those unfortunates so afflicted.

I am, my dear Sir, yours most faithfully,
(Signed) THOS. AITCHISON.

Dunbar, June 4th, 1846.

[This was my first case.—J. S.]

THE "MARSHALL HALL METHOD" IN THE TREATMENT OF ASPHYXIA.

To the Editor of THE LANCET.

SIR,—Should you consider the enclosed communication, with remarks, on a case of recovery from suspended animation, of sufficient professional interest, I shall feel obliged by its publication:—

On Saturday, the 10th of October, a young man named Kanes, aged eighteen, in the employ of a fishmonger of Southampton, in the act of going on board the *Australasian* steamer, missed his footing and fell overboard. An alarm was immediately given, when Bombardier Conner, about to sail with his company for India, hearing that a man had fallen overboard, stripped himself of his clothes, and jumped into the water to the rescue of the drowning man. He dived after him three times in the water about the ship, and was at last obliged to abandon his praiseworthy efforts. R. Russell, dock-headman, was immediately dispatched to procure the grappling-irons; and on his arrival alongside the vessel, made two other unsuccessful attempts to seize the body. Joseph Fryer, foreman to the dock company, subsequently made two hauls from stem to stern of the steamer, and his exertions proved also of no avail. Failing in their efforts to discover the body, Russell was let down into the pilot's boat, a distance of twelve feet, by means of a rope, and then made one haul with the irons from the stem to the stern of the ship, and was again unsuccessful. He lastly made another haul from stem to stern, and succeeded in finding the body. Kanes was now lifted into the boat, a rope was lowered from the ship, to which his body was secured; he was then hauled up to the quay, and finally taken on board the steamer and deposited in the galley, where his clothes were removed and exchanged for hot blankets.

The company's superintendant states most positively, that the body was *completely submerged* for a period of *ten minutes*, and his statement is further confirmed by Russell, Fryer, and several of the bystanders. The above details may appear somewhat prolix; but they are given with a view to establish, in the most unequivocal manner, the calculations of time occupied in discovering and finally landing the body. Medical assistance was sent for in every direction, and the first person who arrived was Mr. M'Cowan, the surgeon of the ship, quickly followed by Mr. Thurston, surgeon to the *Orinoco*, and myself. The first step in our proceedings, on the suggestion of Mr. Thurston, was to remove the body from the galley (or kitchen) of the vessel to an open space in the ship,

where there was a free current of air; the position of the patient was changed from supination, and he was placed on his face, his wrist being carried upwards, as directed by Dr. Marshall Hall, and placed under the forehead. Pressure was now made along the course of the spine and thorax, with a view to induce expiration; the pressure was then removed, and its removal was followed by slight inspiration after the lapse of about *forty minutes*. The weight of the body was then removed from the thorax and abdomen by gently turning it on its side, and a little beyond. These movements were again and again performed, about sixteen times in the minute, and every other remedial measure adopted as suggested and laid down by the distinguished authority above quoted. After the lapse of one hour and a quarter, we imagined that there was a slight movement of the ribs. We still persevered, adding to our prone and postural treatment, the free inhalation of ammonia, when, after a further continuance of our unceasing efforts, we observed that the ribs moved naturally, that the carotids pulsated, the nostrils expanded, the heart performed its ordinary functions—in a word, that after *five hours'* persevering efforts, the patient was enabled, without artificial assistance, to perform the ordinary functions of respiration. During the whole period of our treatment, the pupils remained fixed and dilated, and we were constantly reminded of the imperative necessity of continuing without intermission the means to keep up artificial respiration, as the patient relapsed into a comatose condition, on ceasing for half a minute only, the systematic movements of expiration and inspiration.

I am, Sir, your obedient servant,
Southampton, October, 1857. JOHN WIBLIN, F.R.C.S.

To the Editor of THE LANCET.

SIR,—Should you consider the following case worthy a place in your columns, I shall feel obliged by its insertion.

I was recently called to attend Mrs. Y—, then in labour, in Old Compton-street. On arriving, I found her on her hands and knees upon the bed, the legs and part of the body of the child hanging suspended through the vagina. For about five minutes before I got there (according to the nurse's calculation) pulsation in the cord had ceased, and the parts already in the world were cold and flaccid. I immediately brought down the arms, and in about three minutes the head followed, the child, to all appearance, being quite dead. I at once commenced the Ready Method recommended by the late Dr. Marshall Hall, and in twelve minutes heard a kind of whining or moaning noise, which encouraged me to continue, and in about three minutes more followed an inspiration. At the end of twenty-five minutes the child made a faint cry, when two or three alaps on the nates made it cry out lustily, and respiration was established. The child is now living and doing well.

This being the first successful case out of three within the last two months, I thought it would not be out of place to make the same known in your widely circulated journal.

I am, Sir, your obedient servant,
Berwick-street, Oct. 1857. JAS. HADAWAY, M.R.C.S. &c.

CHAMPAGNE IN SEA-SICKNESS.

To the Editor of THE LANCET.

SIR,—Having read in some late numbers of your journal a few letters on the treatment of sea-sickness, in most of which chloroform is stated to be a never-failing remedy, allow me to say, that when surgeon to a large passenger-steamer, in 1855, I was first in the habit of giving five drops of chloroform in a wineglass of cold brandy-and-water; but though it certainly superseded all other previous remedies (such as kreasote, prussic acid, &c.), I sometimes found it fail, especially with ladies, some of whom would not take it at all on account of its ethereal smell; in such cases, and in all when it was easily attainable, I gave champagne (a glass every half hour), a few glasses of which invariably succeeded in allaying the distressing nausea; and, from its being an agreeable draught, it was always readily taken.

I may add that I have found champagne and chloroform very efficacious in relieving the sickness and cramps of cholera; and I have heard that champagne was a remedy much used at Corfu when the cholera last raged there; perhaps some of our military surgeons who served there will kindly tell us with what result.

I am, Sir, your obedient servant,
RAVENHILL PEARCE, M.D.

Montpellier road, Brighton, October, 1857.

WAR AND MEDICINE.

To the Editor of THE LANCET.

SIR,—How striking is the contrast betwixt the art of medicine and the art of war! The last has for its object the destruction, the first the preservation, of the species. The mind of the warrior teems with machinations of ruin, and anxiously revolves, amongst different schemes that present themselves, which will carry destruction to the widest extent and with the surest aim; his progress is marked by devastation and blood, by depopulated fields and smoking villages; and the laurels which he wears are bedewed with the tears of widows and orphans. The acclamation which he wins from one portion of his species, is answered by the curses and execrations of another; and the delusive splendour, the proud and imposing array, with which he contrives to gild the horrors of his profession, are but the pomp and retinue of the King of Terrors.

The art of healing proceeds, with a silence and a secrecy like the great processes of Nature, to scatter blessings on all within its reach; and the couch of sickness, and the silent retreat of sorrow and despair, are the scenes of its triumphs.

The little applause which is bestowed on phy-

sicians, compared with what is so lavishly heaped on conquerors and military men, conveys a bitter reflection on human nature, by showing how much we suffer ourselves to be the dupes of our senses, extolling the brilliant rather than the useful; whereas a just and impartial estimate would compel us to assign to skilful practitioners of medicine the very first rank amongst merely human professions. For when we consider the variety of ills to which we are exposed, and how large a portion is derived from bodily infirmities, it will appear that we are more indebted to their assistance than to that of any other class of persons whatever. Well may you exclaim, in your leader, "They manage these things better in France!"

I am, Sir, your obedient servant,

J. B. NEIL.

October, 1857.

SEA-SICKNESS TREATED BY OPIATE INJECTIONS.

(NOTE FROM DR. HENRY BENNET.)

To the Editor of THE LANCET.

SIR,—I have perused with interest, no doubt, like most of your readers, the letter of Dr. Harris, in THE LANCET (vide September number), on the treatment of sea-sickness by chloroform. I am afraid, however, that even chloroform will not always control this painful condition; at least if I may judge by my own personal experience. I have taken it in vain when thus suffering, owing, probably, to the stomach instantaneously rejecting it. Indeed it appears to me that the drawback to all ordinary medication in sea-sickness is, that the stomach, the organ most immediately involved, is the one which is made the receptacle of the medicinal agent. The medicine is thus often rejected before it has had time to produce its therapeutic effect. Acting on this idea I have for some years recommended, with success, patients about to take long sea voyages, and habitually suffering from intense and prolonged sea-sickness, to try opiate injections into the rectum; say thirty drops of laudanum in two-thirds of a teacupful of warm water, to be retained. If the first injection is not retained, the second, half an hour later, is all but certain to be kept and absorbed. The nervous system is thus brought under the influence of the narcotic without interfering with the stomach at all; sleep is induced, and quiescence established.

I have recently seen a lady who, three years ago, was hesitating whether she should or should not accompany her husband to the West Indies, where he had a diplomatic appointment, on account of her excessive liability to sea-sickness. Her life had been nearly despaired of, she told me, in a previous voyage. The mode of treatment I now recommend, which of course is only adapted to extreme cases, and prolonged voyages, was adopted with great success. After several days' suffering, thirty drops of Squirrhe's solution of the bimeconate of morphia were injected and retained. Twelve hours' sleep followed, and when

she awoke, all sickness had disappeared. It returned on taking food. The opiate injection was again resorted to, followed by sleep as before, and when she again awoke, she was, and remained, quite free during the rest of the voyage.' On her return to England, she passed through the same ordeal with equal success.

The above mode of exhibiting opiates in sickness is so simple, that I should not have thought it worth while to write this letter were it not that I do not recollect its having been suggested in anything I have read on the subject.

I am, Sir, your obedient servant,

HENRY BENNET, M.D.

VACCINATION.

To the Editor of THE LANCET.

SIR,—The following remarks are intended to explain the Origin and Nature of Cow-pox, on the principle of Liebig's theory of small-pox.

This eminent chemist compares the poisonous germ of small-pox to yeast, and supposes it acts on two principles which are naturally present in the blood in the same manner as yeast acts on the sugar and gluten in wort. The former of these principles, for obvious reasons, I propose calling the *fructifying*, and the latter the *augmenting* principle.

We will examine what changes take place when small-pox is introduced into the teat of a cow: small-pox is not produced, but cow-pox. The poison-germ acted on the fructifying principle in the cow; but this principle differs from that in the human body in this important particular: in the cow, the poison only fructified where it was inserted—it had no power to act on the augmenting principle; but in the fructifying principle in man, it not only fructified, but the fruit had the power of acting on the augmenting principle, and appeared in all parts of the body.

The former class of diseases I would call *contagious*, and the latter *infectious*.

If, then, cow-pox be taken from a cow and be communicated to a child that has not been vaccinated or had the small-pox, the same changes take place as in the cow. The fructifying principle is, by vaccination, either destroyed, or does not come to maturity; the *modified* form of the disease runs its course in four instead of eight, the usual number of days; the pustules are few and far between; and there is no consecutive fever.

When a person has the natural small-pox after vaccination, or the small-pox twice, we may suppose he has the peculiar power of again forming the fructifying and augmenting principles after they have once been destroyed. When revaccination takes full effect, we may also conclude that the fructifying principle had not been wholly destroyed by the previous vaccination; and had the person been exposed to the small-pox, he would have had a modified form of the disease. But when revaccination does not take effect, we should be careful in saying the person is safe, lest the

failure depended on the lymph employed, and not on the state of the fructifying principle.

In some experiments I have made, I have transmitted the human small-pox through the horse and cow, and so to the child in the form of cow-pox, and I think it fully proves that the grease in horses only acts the part the lancet does, or a blister would, in removing the cuticle; and that when small-pox was so general, as was the case previous to the introduction of vaccination, it was *accidentally* communicated to the open wound, and so to the sore teats of the cow, the hands of the ostler, the dairymaid, &c. It also explains to us why, now that small-pox is comparatively so rare a disease, we seldom or never hear of the natural cow-pox in the cow or the grease in horses affording any protection.

From what has been said I think we may conclude that cow-pox is a *contagious variety of small-pox*; that it is a constitutional, and not, as Jenner and some other writers are inclined to consider it, a local disease; that none but diseases which are contagious can be communicated by vaccination; and so difficult is it to convey other diseases, that many cases are on record where the lymph has been taken from persons labouring under small-pox, fever, scarlet-fever, measles, &c., and in no instance has the disease been transmitted with the cow-pox, which has taken its usual effect. I have myself seen two persons, the one vaccinated, the other inoculated, both at the same time from the same individual, and he having small-pox and cow-pox at the same time. The one vaccinated had cow-pox; and the one inoculated had small-pox.

I am, Sir, yours truly,

J. S. FLETCHER,

Surgeon to the Bromsgrove Union House and District.
October, 1857.

SPONTANEOUS RUPTURE OF THE VAGINA.

To the Editor of THE LANCET.

SIR,—If you consider the following case of midwifery worthy of a place in THE LANCET, you will kindly insert it at your earliest convenience.

On Sunday, the 11th of January last, I was requested by Dr. — to see a patient under his care, who was in labour thirty hours before the doctor's arrival. I was called in in consequence of spontaneous rupture of the vagina. I was requested to operate; but before commencing, the doctor and I thought it prudent to acquaint her husband and relatives with her true condition, and to express our fears that she certainly would die before the operation was completed, or shortly after, at the same time telling them that it was the only means of preserving her life, and that there might still be a chance. I passed my hand into the vagina, and on through the rent; found the child lying in the peritoneal sac, quite distinct from the uterus; the womb as large as a child's head (felt along the promontory of the sacrum), and empty. I felt the intestines and beat of the large arteries, and per-

ceived the lower part of the liver. I grasped the feet of the child, and delivered; subsequently abstracting the placenta, membranes, and large clots of blood. Peritonitis followed, but yielded to treatment, the woman recovering in a few weeks.

Two years previously, this patient had been delivered (by Dr. —, who now sent for me to assist him) with the forceps, the child's head and face being grievously injured, and it died in a few hours. Subsequently she had been delivered by the natural efforts. The child died; feet presented: a midwife was in attendance.

About four or five weeks ago I made an examination, and found the os uteri normal; a cicatrix was readily discovered in the vagina. The patient walked from her own residence to Pomeroy, a distance of three or four miles, without being fatigued, for the purpose of making the examination alluded to.

I am, Sir, your obedient servant,

ROBERT HENRY,

Medical Officer of the Pomeroy Dispensary.

Sept. 1887.

A MONUMENT TO MARSHALL HALL, F.R.S.

To the Editor of THE LANCET.

SIR,—Although there is no fear that the name of Marshall Hall will be forgotten, yet I think there should be a conspicuous and enduring memorial of this great physiologist; and as Nottingham was the place of his first labours, and chosen as the last resting-place, the beautiful cemetery of that town is, I think, the most suitable place for its erection.

I would most respectfully suggest that the medical men of Nottingham form themselves into a committee (adding other brethren wishing to act) for carrying out this object; and that the expenses be defrayed by the voluntary subscriptions of the members of our profession.

I am, Sir, your obedient servant,

R. B.

October, 1887.

THE LATE DR. MARSHALL HALL ON THE TOBACCO QUESTION.

To the Editor of THE LANCET.

SIR,—The following "Note on Tobacco" was written by Dr. Marshall Hall during the tobacco controversy, but was not published, but forwarded to me, knowing the deep interest I take on that subject. As he designed it for publication in THE LANCET, I shall be much obliged by its insertion.

I am, Sir, your obedient servant,

JNO. HIGGINBOTTOM, F.R.S., &c.

Nottingham, Sept. 1887.

A NOTE ON THE EFFECTS OF TOBACCO.

WHEN I first occupied my present lodgings, I was struck with the almost constant appearance of a young man, obviously of fortune or independence, who walked up and down on the opposite

side of the road, half-way between my window and the sea. He was tall, robustly made, but stooped, and his whole gait and appearance were slow, slouching, and inanimate. I long wondered at the phenomenon. I could not imagine what should induce a fine young man so to occupy himself, or rather to pass hour after hour sauntering up and down without occupation. At length the mystery was solved. I observed, what I had not discovered at first, that the youth had an occupation: between his hand and his lips he constantly held a *pipe*. He thus therefore spent his time dreamily away, without energy, without object, in a state of constant half narcotism.

I have known members of my own profession so to devote themselves to this narcotic as utterly to lose the energies requisite for activity in study and practice, and consequently for success;—a room, a dress devoted to the purpose of smoking; hours spent in the indulgence of the solitary vice; half narcotism, half anæsthesia.

I would not boast, but I think I may affirm, without boasting, that I have *laboured* in the cause of medical science, during two-fifths of a century, more than any one. This journal bears testimony to these labours, and with whatever success they may have been crowned, I am firmly convinced that I never should have accomplished them had I been a smoker—had I absented myself from society, and shut myself up in a peculiar room and in a peculiar dress, the impersonation of *self*, and solitude, and oblivion.

I write this for the warning of my younger professional brethren.

It is plain tobacco acts on the cerebrum, the medulla oblongata, and the heart; its effects are stupidity, defective breathing, defective action of the heart—forms of debility and impaired energy. These phenomena are primarily physical and physiological; no doubt the blood is poisoned, and in its turn poisons the brain, the medulla, and the heart. Sometimes, in those who smoke for the first time, these symptoms occur in a form even of danger. Such a case occurred to me many years ago, and was published in the *Edinburgh Medical and Surgical Journal* (in 1816). Of this case I propose to adduce a brief extract:—

"Mr. J. H., aged nineteen, unaccustomed, except for a day or two before, to the effects of tobacco, smoked one and part of a second pipe. He became affected by violent syncope, and by violent retching and vomiting. He returned home, complained of pain in the head, undressed himself, and went to bed. Soon afterward he was taken with stupor and laborious breathing. He was found in that state by the medical attendant. The countenance was suffused with a deep livid colour; the eyes lost their brilliancy; the conjunctivæ were injected; the right pupil was exceedingly contracted; the left was much larger than usual, and had lost its circular form; both were unaffected on the approach of light. The hands were joined, and in a state of rigid contraction; the arms bound over the chest; and

the whole body was affected with spasmodic contractions; the breathing was very stertorous."

From these several symptoms we may pretty accurately judge of what is going on in the brain in solitary smokers, and in a minor degree in all smokers. The robust may support the effects of tobacco; but the feeble will assuredly pay the penalty of languor, inertia, and incapacity. I have known more than one instance of members of our profession, both in its higher and lower ranks, making shipwreck of their success and fortune by addiction to solitary and sedentary smoking.

News Items, Medical Facts, &c.

APOTHECARIES' HALL.—Names of gentlemen who passed their examination in the science and practice of Medicine, and received certificates to practise, on

Thursday, October 29th, 1857.

BUSS, HENRY.

EARLE, JOHN, Ripon, Yorks.

HUGHES, THOMAS, Holyhead.

LANDER, JAMES, Glasgow.

TENCH, EDWARD BEAVAN, Hereford.

DR. IRELAND OF THE E.I.C. SERVICE.—It appears, from a letter of the special correspondent of the *Illustrated London News*, at the camp before Delhi, that Dr. Ireland—late house-surgeon to the Dumfries and Galloway Royal Infirmary—who was at first reported killed in the action at Nujuffhur on the 26th August last, was afterwards found to have been only wounded, and was, at the date of the letter (August 28th), doing well, notwithstanding that a ball had entered the eye and passed below the brain, coming out near the ear, and that he had a second wound, though of a less serious character, a ball having entered the shoulder, and which was found lodged in his back.

MR. DONALD DALRYMPLE.—This esteemed provincial surgeon met with a serious accident on the 29th ultimo, while he was shooting with a party of friends, at Lakenham. Mr. Dalrymple was incautiously loading one of the barrels of his gun, leaving the other in full cock, and while using the ramrod, the undischarged barrel exploded, carrying away the forefinger of his right hand, severely mutilating his thumb, and lacerating the cheek and one of the eyelids. We are happy to say he is progressing favourably.

PROFESSOR SEDGWICK.—This gentleman has resigned the Woodwardian Professorship of Geology at Cambridge, which we believe he has held for the last forty years. The learned Professor has long been subject to severe attacks of bronchitis, the results of which have seriously interfered with the discharge of his professional duties. It appears almost as if we were to have a dearth of geologists in this country: Buckland, Forbes,

and Hugh Miller dead, and Sedgwick at the end of his active career. We have not yet heard who is talked about for the vacant chair. Whoever may be chosen, it will be a trying office to fill after such a man as Adam Sedgwick.

LIEBIG'S CLASSIFICATION OF FOOD.—The Academy of Science and Literature, Montpellier, offers a prize of 500 francs for the best memoir on the following subject, proposed in the section of medicine:—"Do there exist any kinds of Food which deserve the title of 'Respiratory'? If this question be affirmed, determine their nature, and follow their transformations from the moment of their introduction into the alimentary canal to the last combinations which occur in the act of respiration." Address the Memoir, whether in French or Latin, before August 1st, 1858, to the General Secretary of the Academy, Rue de l'Ancien Courier, No. 13.

DR. FELIX JACQUOT, professeur agrégé at Val de Grâce, well known by various medical works, died recently at Paris with double pneumonia.

HONOUR TO SCIENCE.—The city of Etampes, in the Department of Seine et Oise, have just erected a monument to Etienne Geoffroy St. Hilaire, the Owen of France, who was born within its walls.

NOTTINGHAM LUNATIC ASYLUM.—His Grace the Duke of Newcastle, laid the foundation-stone of a new lunatic asylum, on the Coppice Hill, near Nottingham, on the 30th ult., in the presence of a vast concourse of spectators, amongst whom were Lord Belper, Viscount and Viscountess Newark, Mr. Paget, M.P., the Mayor and Corporation.

M. GEOFFROY, the chief physician of the Hospital for the Insane at Vaucluse, has been assassinated by an epileptic patient.

TREATMENT OF CANCER BY ESCHAROTICS AT LA PITIE.—M. Maisonneuve, a few days since, employed "arrows" of the "pâte de Canquoin," in two cases of scirrhus of the breast, and a doubtful sub-maxillary tumour, at La Pitié. In one of the first cases, the pleural cavity was found perforated upon the separation of the slough. Strange to say, the patient is reported to have done well. The accident was attributed by M. Maisonneuve to an internal prolongation of the scirrhus mass.

THE King of Bavaria has presented the gold medal of Maximilian, accompanied by a donation of 300 ducats, to Dr. Schonbein, of Bale, for his important researches upon ozonified oxygen.

THE YELLOW FEVER AND THE WEST INDIA PACKETS.—The news brought by the *La Plata*

is, that cholera was still raging fearfully in Central America, but that the West Indies was free from cholera and yellow fever. It is now five years since the *La Plata* arrived home on her first voyage as the first homeward-bound West India packet infected with the yellow fever. Her commander and several others had perished during her voyage. From that time to the present, almost every homeward-bound West India mail steamer has been more or less infected with the fever. As many as thirty persons have died of it on board one packet during a single voyage. The alteration of the coaling arrangements at St. Thomas's, and the administration of quinine every morning, appear to have had the effect of staying the plague.

AMPUTATION OF A LEG BY LINEAR ÉCRASEMENT.—On the morning of the 4th ult. M. Maisonneuve removed a leg, just above the ankle, "par écrasement." He first broke the bones by means of an instrument expressly made for that purpose; he then completed the operation by means of an écraseur of unusual dimensions, turning the foot completely round and round, so as to separate the bone from its attachments, and withdraw it. No vessels were tied, and no hæmorrhage occurred subsequently. This may appear to some the triumph of the system of linear écrasement. To us it seems only a needless barbarity, and a symptom of retrogression rather than of progress in the art of surgery.

SCIENCE AT CAIRO.—We are very glad to receive a highly interesting contribution to comparative anatomy from a quarter whence we could least have expected it. It has long been known to naturalists that several of the African rivers contain a fish (*Silurus* or *Malapterurus electricus*) remarkable, like the torpedo and gymnotus, for its electric properties; but no minute examination of its electrical apparatus had been made, until Dr. Bilharz, the Professor of Anatomy in the Medical School which was established at Cairo by Mahommed Ali, took up the inquiry, which he has prosecuted with great zeal and success. To everyone who is interested in the study of the remarkable physico-physiological phenomena which the electrical fishes present, this admirable monograph will be welcome, as exhibiting to them a form of apparatus which differs in many respects from that of either the torpedo or the gymnotus, and which therefore presents such a new set of conditions for the development of the electrical force, as may help towards solving the problem of its production. Specimens of this fish are at present living in tanks at the Botanic garden, Edinburgh; and we understand that Dr. Bilharz's anatomical descriptions have been confirmed by the observations of Professor Goodsir.

MR. TRAVERS.—This distinguished surgeon has

just been appointed Serjeant-Surgeon to her Majesty, in the vacancy occasioned by the decease of Mr. Keate.

THE JENNER MONUMENT.—On Thursday, the 5th inst., a meeting of the Jenner monument committee was held at Sir James Clarke's; and it was decided that the inscription should be simply the word—"Jenner." Dr. Scott Alison argued in favour of the words, "The Originator of Vaccination," being, on the grounds that they would at once indicate the Jenner honoured, and the service which he conferred on mankind. The site secured is Trafalgar-square, close to the Union Club. The pedestal will be formed of Cornish granite, the same as that used in the construction of London-bridge. A few pounds are still desiderated to meet the expenses of the erection, which will take place about the beginning of the year. It was also resolved, that the subscription list should be kept open till the 1st of February next, when it will be closed, and the accounts made up. We trust that those who may have omitted to forward their subscriptions will avail themselves of this opportunity. There were present Sir James Clarke, Sir John Forbes, Dr. Conolly, Dr. Scoton, and Mr. Pettigrew.

MEDICAL BENEVOLENT FUND.—Mr. Toynbee, the treasurer of this most valuable fund, to which we heartily wish success, has made an appeal to the profession, which contains the following striking sentence:—"As a proof that we ought to be supported, let me say that we relieved seventy-four cases last year: that our working expenses are almost too small to be noticed. As a proof of our being duly appreciated by some, our yearly income is, from subscriptions, £634; we pay from our funded property £286 a year for our pensioners; we have six houses, comfortable homes, given us by Mr. Bailey, surgeon, of Chippenham; we have just received an anonymous donation of 500 guineas, for the aid of urgent cases; and we have, by the kindness of Mr. Churchill, the use of a committee-room, free of expense. To show you how much may be done by those having the will to aid us, let me remind you that Mr. J. G. Leete, surgeon of Thrapstone, gave us, in 1851, the sum of £13 3s., collected by his own efforts, in shilling subscriptions, from Poor-law Medical Officers. Surely not a word more is required than these—'to do more good, we want more money.'"

THE LAST DODGE OF THE THIEVES.—A fellow called at 22, Pentonville-road, on Tuesday evening, stating to the servant that "he had a parcel of fish for Dr. Thomas." While she went to ask if it was "right," he made off with a great-coat and a hat from a peg in the hall, leaving the indiscreet domestic in possession of ample material for self-reproach and a couple of red-herrings.

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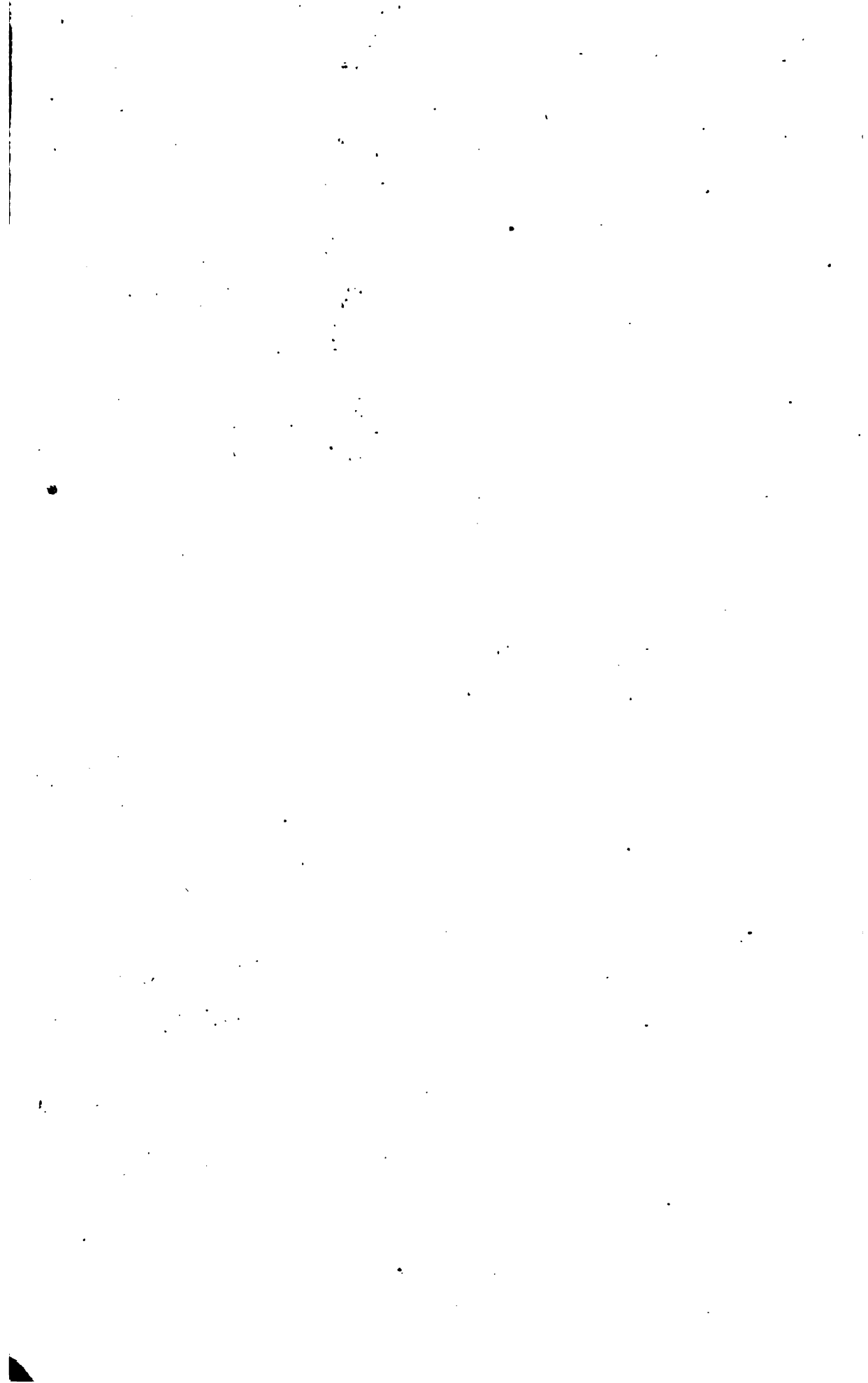
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